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A guide for architects, administrators and home economics teachers, ranging from educational philosophies underlying home economics education and educational specifications to floor plans and detailed specifications for facilities and equipment. Included is a bibliography listing resource materials on space and equipment for high school home economics departments. (FPO)

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GUIDE

FOR PLANNING

THE HOME ECONOMICS DEPARTMENT

EF003284

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State Department of Education
65 South Front Street
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Foreword

The information in this bulletin will be of value to architects, administrators and Home Economics teachers in planning space and facilities for Home Economics departments. Much of the material for the bulletin resulted from a workshop held at Ohio State University in June, 1963.

Acknowledgment is due Miss Grace Beckwith, Assistant State Supervisor of Vocational Home Economics, for preparing the publication and for her presentation of educational trends in department planning.

Appreciation is expressed to all program participants and consultants for their ideas and suggestions that serve as the basis for this bulletin:

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Other information was gained through visiting Home Economics departments, consulting teachers, architects, and State Department personnel. Illustrations and department plans were made possible through contributions from various schools.

Margaret McEniry, Head
Home Economics Education
Division of Vocational Education
State Department of Education

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CREDIT FOR ILLUSTRATIONS

Clothing Construction Work Centers: Troy High School, Troy, Ohio; and Clothing Laboratory, Ohio State University

Demonstration Centers: General Crawford High School, North Robinson, Ohio

Sliding Chalkboard on Storage Cabinet: Clothing Laboratory, Ohio State University

Storage Near a Teaching Center: Hayes High School, Delaware, Ohio

Space Savers: Talawanda High School, Oxford, Ohio

PART I

UNDERLYING PRINCIPLES IN PLANNING SPACE AND FACILITIES

The Home Economics program is the basis for planning space and facilities for the Home Economics department.

The major goal of Home Economics is to prepare youth and adults for responsibilities of homemaking and family life, and in some instances, to provide knowledge and skills necessary for home and community services occupations.

Since the major goal is training for home and family life. the learning experiences provided in the program help individuals to acquire skills in managing a home and in performing household tasks. as well as to develop attitudes and values necessary for satisfying family life.

The program includes the following phases:

* Foods and nutrition; selection, preparation, care and storage
* Clothing and textiles; selection, care and construction
* Care and guidance of children
* Housing, home furnishings and equipment; selection and care
* Personal, family. and community relations
* Management of personal and family resources, and consumer education

Initial planning for the Home Economics department should provide the space and facilities needed for teaching all phases in the Home Economics program.

Present Home Economics programs mirror the changes in family life today. Changing patterns in family living, therefore, prompt greater emphasis on family relationships, child development and growth, consumer problems, nutrition, and management. With less emphasis on skills and more emphasis on these relationships and management within the home, the facilities needed for carrying out today's Home Economics program will include space and equipment for non-laboratory as well as laboratory activities.

Some programs for gainful employment in Home Economics are focused on instruction in the subject matter areas that qualify individuals to engage in home and community service occupations.

The arrangements for kinds of space and facilities needed for programs on gainful employment will be influenced by the type of course offerings.

The Home Economics department furnishes a pleasing home-like atmosphere, but at the same time provides an environment for learning.

Although a pleasing home-like atmosphere stimulates an interest in making homes attractive and livable, school rooms are different from home situations. A school needs greater formality because of the large number of pupils in a class, and the time limitations of a class period. The Home Economics department should be a place for pupils to learn how to learn.

The space and facilities in the Home Economics department need to relate to the standards of living attainable in the community.

Although there is a need to look to the community for selection of furniture and equipment for the Home Economics department, the homes in the community must not necessarily be used as a model in planning. Wide diversities are found in standards of living in present day communities; therefore, no one pattern can be designed to fit all situations.

There is a need to look beyond the community because Home Economics teaching today requires modern equipment for modern methods, and the facilities in the department should reflect developments in types of equipment and furnishings. Variety in kinds of furniture and equipment and materials used in the department provide opportunities for pupils to gain information and experiences that will help them in making sound choices in their own homes.

Flexibility is the key word in planning space and facilities for the Home Economics department.

Technological changes make it virtually impossible to keep up to date; thus, flexibility in planning facilities is the best key so far.

Permanently fixed walls and permanently fixed equipment make it difficult - and expensive - to adapt to the new and the different. The use of large free areas and equipment that is movable and multi-purpose in use allows for change in the use of space and for getting maximum use of the department.

The Home Economics department is planned and equipped to serve the needs of the various groups in the community.

The use made of the Home Economics department will determine space and equipment needed. In planning a department, possibilities for meeting the needs of the following groups should be considered:

* Pupils in the regular homemaking program

* Pupils wanting specialized instruction in separate classes

* Pupils in special education classes, and potential drop-outs who need longer periods of time for instruction

* Pupils developing skills in gainful employment in home-related and community-service occupations

* Seventh and eighth grade pupils

* Adults enrolled in adult or parent classes

* Special teachers or leaders using facilities for Home Economics classes, such as adult and job training classes

Space and facilities for the Home Economics program can be extended through the use of community resources.

The classroom laboratory need not be the sole source of learning in Home Economics. This means that department planners should evaluate community resources as to their availability and utilization. Wise use of community resources may mean a saving of space and money for equipment. For example, equipment for home nursing and/or play school may be available from an outside source and borrowed for these particular learning activities.

Trends in Education will influence space and equipment in Home Economics departments

The Home Economics department needs to keep pace with modern-day changes in education in order to maintain a quality program. In planning a department, consideration should be given to new trends in education and new designs in building which may affect space and equipment requirements both now and in the future. On the following page are listed some of the apparent trends in education with implications for Home Economics.

MODERN TRENDS IN EDUCATION

WITH IMPLICATIONS FOR SPACE AND EQUIPMENT IN HOME ECONOMICS

TRENDS IN EDUCATION

More student experimentation to develop scientific thinking

More practices for students in decision-making for wise consumption

Encouragement of creativity in thinking and doing

Independent study with special projects of an individualized nature

Longer or shorter class periods than usual, and classes larger in size

More provision for adult education and out-of-school groups

Greater mutual exchange with the community

Team teaching

New designs in school buildings such as windowless walls in air-conditioned buildings, unusually shaped rooms

IMPLICATIONS

Flexibility in use of space

Multi-purpose furnishings that will facilitate flexible and varied use of space

Greater variety of instructional materials to develop thinking, as well as skills

Library facilities in each classroom

Storage for instructional facilities, other than foods, and clothing greatly increased

New arrangements of space and equipment due to new designs in school buildings

PART II

PLANNING THE HOME ECONOMICS DEPARTMENT

The Home Economics Teacher's Responsibility

The Home Economics teacher is in the best position to know what is required to accomplish the desired goals of the program. She must be aggressive enough to ask for what is needed to do the job well. Both experienced and inexperienced teachers know the program and although the inexperienced teacher may lack teaching experience, and cannot make extensive decisions as to facilities, both have a contribution to make. The Home Economics teacher should know and be able to explain why a certain allocation of space is required.

As soon as the need for new facilities becomes evident, the administrator should involve the Home Economics teachers in program and educational specifications development.

The four steps in planning are:

* Program planning stage
* Preliminary planning stage
* Large-scale layout stage
* Working drawings or contract document stage

If a teacher's contributions are to have value, she must have sufficient background and be involved in the earliest stage of the planning process. A starting point is an evaluation of present facilities in the light of present and future needs. Students participating in the evaluation may also bring out good ideas for department needs.

Visiting new departments furnishes worthwhile suggestions but ought not be done prior to the definition of the school's program in Home Economics. A word of caution is necessary, however. The facilities in departments visited need to be considered in terms of the contributions they make to education for homemaking, rather than reflecting personal likes and dislikes of the teacher. The Home Economics teacher must also realize there are other programs which must be housed within the budget.

An important step is to involve key people in the community. Lay persons interested in the Home Economics program may be invited to meet with the teacher. The Home Economics teacher must be prepared to present a picture of her program by explaining the needs and interests of her pupils and the content and objectives of Home Economics. This council may prove very helpful in promoting creative thinking concerning present and future needs of the department.

Bulletins on equipment, storage, and materials from equipment companies, and professional magazines offer valuable helps in planning. Securing these materials in the early stages of planning so that they may be assembled for future reference is a necessary step. (See appendix for references.)

Professional assistance in planning may also be secured from the State Department, Vocational Home Economics. For best results requests for help should be made in the initial stages of planning.

Other professional people to contact are specialists in Home Economics and Teacher Education from State Universities.

Writing Educational Specifications

The major responsibility for a new school falls on the architect, the school administrator, and the Board of Education. In some schools an educational consultant is brought in to work with the architect, administrator, and instructional staff to serve as an advisor to the architect and Board of Education.

The responsibility of the Home Economics teacher is to supply the information as to program function and facilities desired to the persons responsible for planning. This information should be presented in the form of educational specifications that provide the architect with a clear description of the Home Economics program together with the facilities needed and types to be provided.

The specifications should furnish a basis for working drawings for the architect. They need to be in sufficient detail and should not leave any unanswered questions of an educational nature to the architect.

The following is a suggested outline of the content in educational specifications for Home Economics:

I. The Home Economics Program

A. Statement of philosophy of Home Economics (This statement should be closely related to the local situation.)

B. Curriculum
   1. Purposes
   2. Phases of Home Economics offered
   3. Special emphasis given to certain phases of the program
   4. Learning experiences or activities included
   5. Length of program

C. Age groups to be served

D. Maximum class size (Begin with a class of 24 people)

E. Number of teaching stations needed for projected total school enrollment

II. General Requirements

A. Space
1. Number and types of rooms (Teaching stations included)
2. Approximate amount of space in terms of the square feet of rooms (Indicate any special combinations of rooms)
3. Phases of Home Economics to be offered in each area or room (Include activities to be carried out)
4. Space for work or activity centers (Ex. Unit kitchen: the number of square feet of floor space and the lineal counter space)
5. Possibilities for dovetailing use of space within a room (Multi-purpose use of space)
6. Storage space in each room or area for student supplies, equipment, and instructional materials
7. Chalk board, tack board in each teaching station

B. Location
1. Preferred location of department
2. Preferred location of storage
3. Preferred location of teachers' work center or office
4. Electrical outlets

C. Utility Services
1. Electric, gas, and water
2. Electrical equipment for present and future needs
   a. Designate heavy-duty wiring and location of use
   b. Designate small-appliance wiring and location of use
   c. Circuits needed for appliances
3. Plumbing for present and future needs
   a. Desirability of running water in each room

III. General Details

A. Color for walls, cabinets in kitchens

B. Types and finishes for cabinets

C. Materials for work surfaces

D. Desirable arrangements for kitchens

E. Preferred floor finishes

F. Provision for use of teaching aids such as projects or television

G. Display case (location and size)

PART III

LOCATION AND ARRANGEMENT OF SPACE FOR HOME ECONOMICS DEPARTMENT

Location

A desirable place for the Home Economics department is on the ground floor, preferably near an outside entrance. This location offers these advantages:

* Convenient delivery of supplies

* Easy installation and removal of large equipment

* Accessibility for adult classes and non-school groups

* Less distraction for other classrooms, when the department is used for play groups or other organizations during the day

The new concepts of good location place the Home Economics department in the main school building. Here, the department may well be near rooms housing related areas to facilitate integration of subjects. For instance:

* Adjacent to the social studies classrooms, if family life is emphasized in the Home Economics department

* Near the science laboratories, if science principles are to be integrated intensively with Home Economics

* In the arts center, if the departments of Art and Home Economics are to work closely together

* Adjacent to or near the cafeteria, if food preparation is directed toward training for food service

* In the vocational wing, if special emphasis is given to occupational training for home-related jobs

The specific location will be determined by the philosophy of the school, and by the emphasis given to the Home Economics curriculum.

Rooms adjacent to each other in the Home Economics department tend to unify the program and to promote the use of the facilities. When two or more teachers share the department, such a grouping allows for easy communication, sharing of equipment, and exchanging rooms with other staff members. In large schools with several rooms, rooms on both sides of the corridor make a more compact department than if a row of rooms is arranged the full length of the corridor.

Space Requirements

Factors to consider in planning space and facilities for the department:

* The program offered (see page 2)

* The groups served (see page 4)

* Potential student enrollment in Home Economics (based on projected school enrollment). Twenty-four students is a recommended class size. However, in view of increasing high school enrollments, classes (especially in large metropolitan areas) may be as high as 30-36 pupils. New educational trends (team teaching) indicate that classes in the future may vary in size. Some may be as high as 100 while other classes may have only fifteen pupils.

* Provisions for expansion should be considered at the beginning of the building program. Plans for taking care of increased enrollments in the Home Economics department may be through (1) arranging some of the adjacent classrooms so that they can be easily converted to a part of the department when necessary or (2) location of the department so that when future additions are made to the building, the space for the Home Economics department may be extended.

* Activities - An important step in determining space requirements for the Home Economics department is to think through the kinds and amount of space needed for the activities that will take place in the Home Economics classes.

The starting point is to list the activities for each phase of Home Economics that is a part of the program. After a list is made, consider the following questions in planning kinds and amount of space needed for these activities:

- What kind of things can be done just as well with large numbers of students as with small?

- In what kind of activities would a total class participate?

- For what kind might several classes be combined?

- For what kind of activities would individual work stations be needed?

- Should these be for quiet study and reflection or for active work with equipment?

FACILITIES FOR CARRYING OUT ACTIVITIES IN THE HOME ECONOMICS PROGRAM

Activity	Potential Groupings	Facilities Needed
Discussion	Either large or small groups, individual students (with teacher)	Non-laboratory. Students seated comfortably at tables or tablet-arm chairs; teaching centers provided.
Observation - demonstrations, films, movies, TV, children at play	Either large or small groups, in some cases individual students	May be either laboratory or non-laboratory depending on activity. (Space adequate for group observing and for equipment and individuals carrying out activity.)
Reading, Studying, and Writing	Either large or small groups, in some cases individual students	Non-laboratory. (Chairs and tables or tablet-arm chairs.)
Dining and Hospitality - serving meals and foods for special occasions	Either large or small groups	Laboratory. Facilities for serving food—tables and chairs, unit kitchens.
Individual Foods and Meal Preparation	Small groups	Laboratory. Unit kitchens.
Clothing Construction	Either large or small groups	Laboratory facilities. (See Clothing.)
Experimentation - textile study, furniture arrangement, kitchen arrangement, care of fabrics, study of household equipment	Individual or small groups	Laboratory facilities. Laundry, unit kitchens, sink in clothing laboratory, equipment in department (stoves, etc.)
Teacher-Pupil Conferences	Individual or small groups	Space for privacy

- Which activities would require small groups working together?

- What size might these groups be?

- To what extent are laboratory facilities required?

- Which activities can be carried out in non-laboratory rooms?

* Flexibility

  - Large free areas available for total class experiences, but adaptable for certain small group experiences.

  - No small permanently walled-in areas.

  - A minimum of fixed installations extending into the room.

  - Areas of the room adaptable to teaching more than one unit and to using different methods of teaching. A rectangular room, 28-30 feet wide, allows for revamping or relocating some equipment to accommodate various learning experiences.

Arrangement of Space

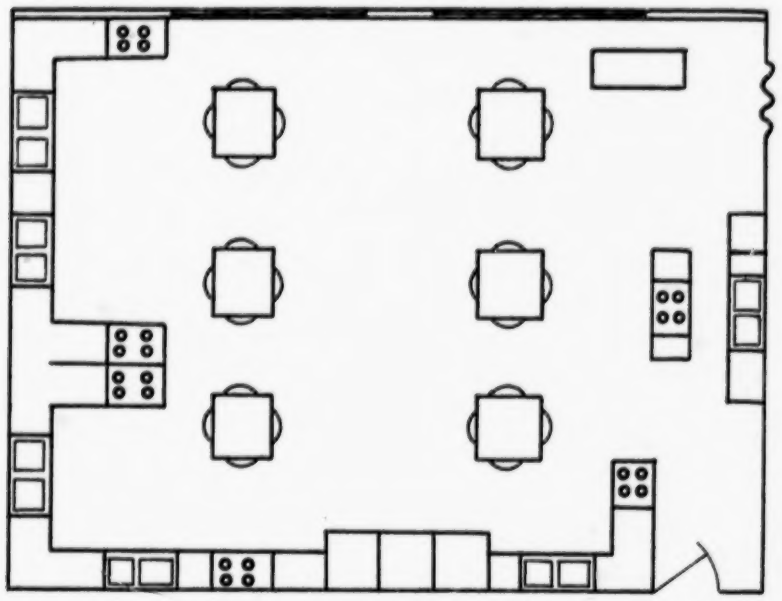
There are certain basic areas that constitute every Home Economics department. These areas are primarily equipped for specific activities in the program, such as the foods area, the clothing area and the family living area.

Although an area is planned for teaching a particular phase of homemaking, the space should be sufficiently flexible to allow for instruction in other phases. For example, in an area designed for clothing, consumer education, family relations, child care and management might be taught. Illustration I and II show flexible use of space in Foods and Family Living Classrooms.

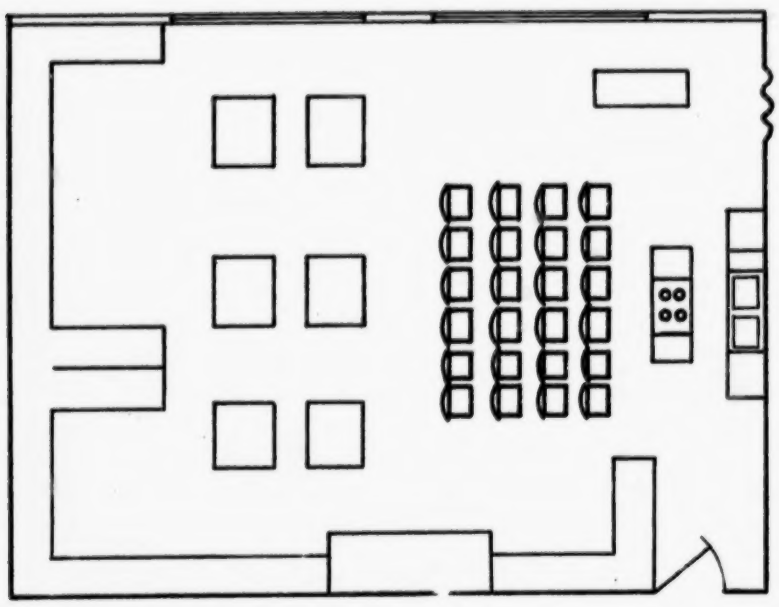
These basic areas in the Home Economics department may include two or more work and/or activity centers. The following centers are important in any department: the food preparation center; the demonstration centers; the clothing center; the laundry center; the teacher's work center; the storage center; and the living center.

The Home Economics department may consist of one, two, or more rooms. Regardless of the arrangement, the space should be provided in the Home Economics department for carrying out a comprehensive Home Economics program. When courses in wage earning are offered, special facilities needed must also be given consideration.

MULTI-PURPOSE USE OF FOODS CLASSROOM



Food preparation, meal service, and discussion

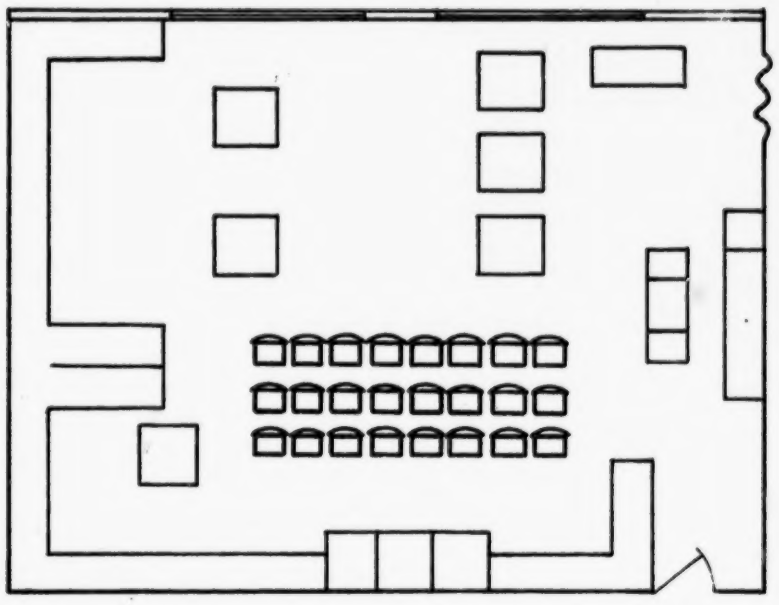


Food demonstration

Diagrams show the use of the same floor space for four different activities.

* Food Preparation
* Meal Service and Discussion
* Food Demonstration
* Laundry Demonstration

NOTE: Arrangement of equipment frees the center floor space.



Laundry demonstration

ILLUSTRATION I

The All-Purpose Room

The all-purpose room is planned and equipped to provide instruction in all areas of homemaking. This room is best suited for an activity program and is more adaptable to the junior high school level. A single all-purpose room is for a one-teacher department; a two-teacher department may have two all-purpose rooms. This arrangement is the most expensive but has certain advantages. Scheduling is simplified and each teacher has full responsibility for her own classroom.

<u>For effective use, the all-purpose room must be:</u>

* Large enough for instruction in all phases of the Home Economics program

* Planned for multi-purpose use

  - Same space used for teaching more than one phase of Home Economics (Example: Space used for meal service used for class discussion and clothing construction)

  - Furniture and equipment serve a dual purpose (Example: same table used for meal service, sewing and study)

  - Movable storage cabinet (36" high) used for room dividers and additional work surface as well as storage

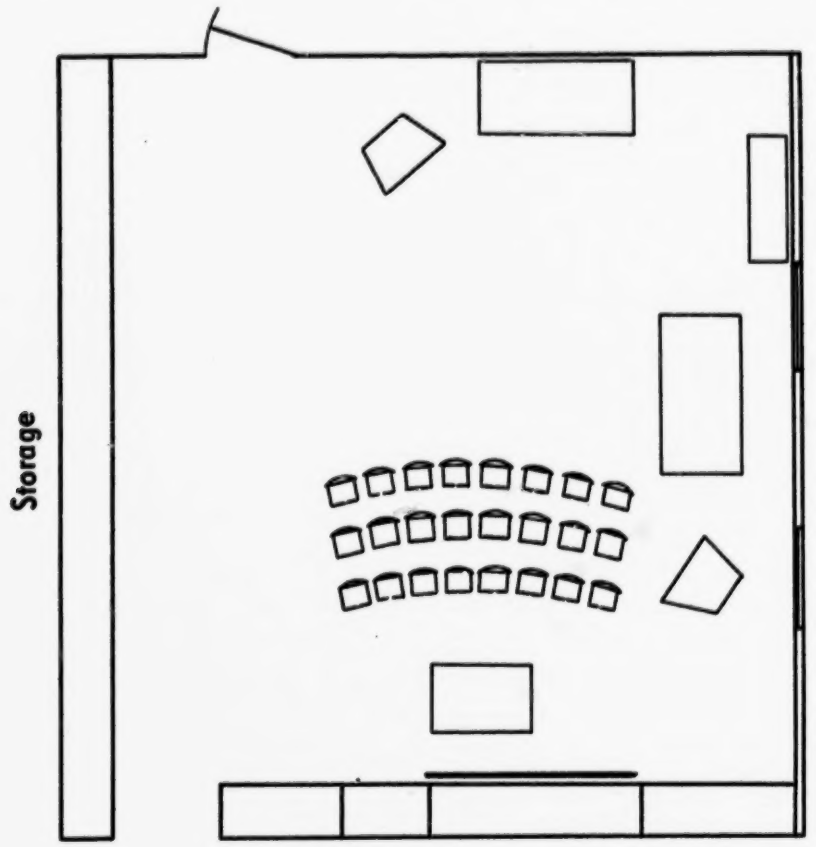
* Space is organized so that the activities in the work centers can be easily supervised

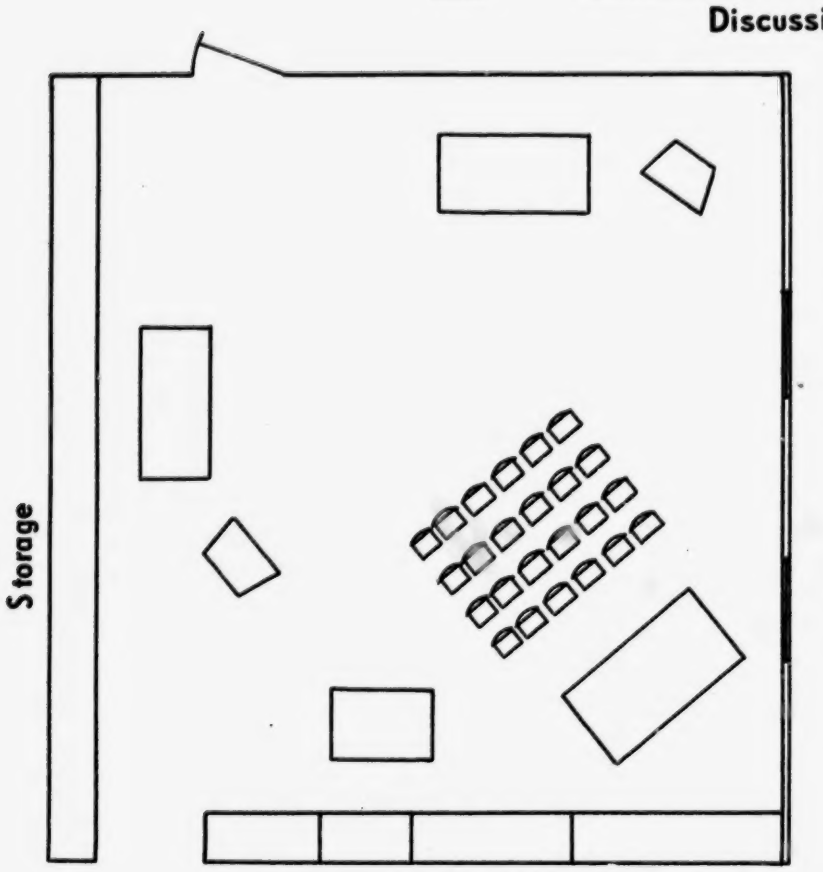
* Planned for adequate storage space. The limited wall area makes it virtually impossible to include enough wall cabinets. Therefore, a walk-in storeroom is desirable for sufficient storage.

* Planned to accommodate classes of 24 pupils

* Provided with chalkboard and tackboard. Chalkboard is accessible to the teaching center

MULTI-PURPOSE USE OF SPACE IN FAMILY LIVING CLASSROOM





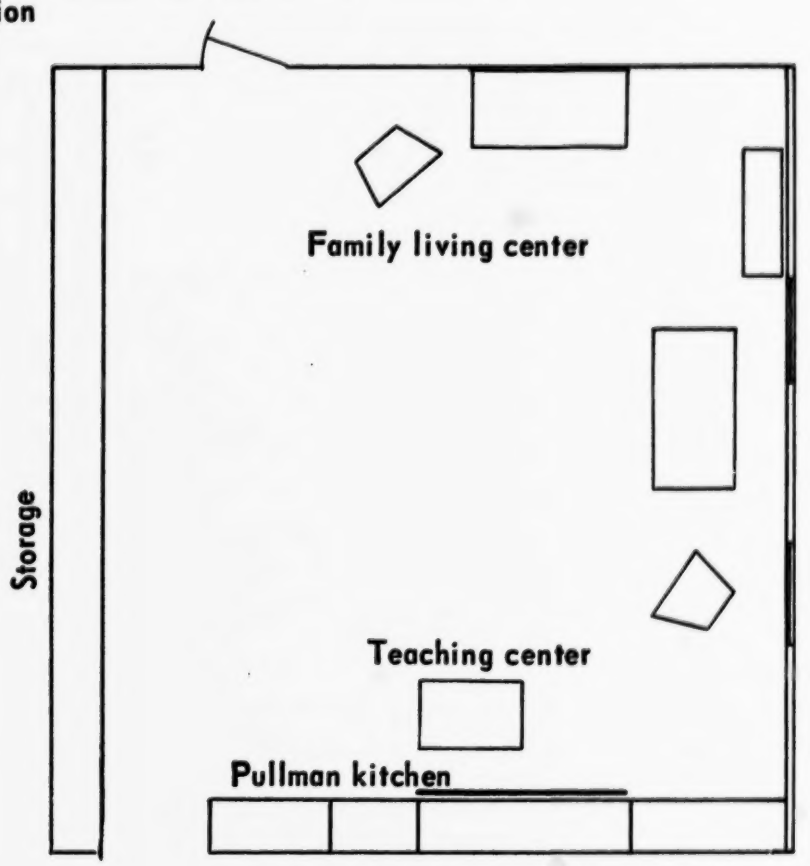


ILLUSTRATION II

The above diagrams show the use of the same space in a family living classroom for four different activities. They are:

* Discussion using tablet arm chairs
* Demonstration in home nursing using a hospital bed and tablet arm chairs
* A playschool
* Social activities

Part of the storage along the wall is low and is used for books, toys, and other small play school equipment. Room is of sufficient size to allow for playschool activities and observations.

The Multi-Purpose Room

The multi-purpose room is designed for instruction in two or more phases of Home Economics.

A department may have two or more multi-purpose rooms with one or two teachers. In a two-teacher department, the rooms are shared co-operatively by exchanging rooms for units of teaching.

The most common arrangement for a (two multi-purpose rooms) department is: one room for teaching foods, nutrition, management, and laundry and another room for teaching the rest of the home economics program.

Another combination for a (two multi-purpose rooms) department is: one multi-purpose laboratory planned and equipped for teaching the skills--food preparation, clothing construction, and laundry. The other room is designed to teach the part of the program that does not require laboratory facilities. A hospitality center is included in the room for social activities.

A Three or More Room Department

Departments of three or more rooms may include various arrangements such as the following:

* One room for foods, nutrition, and laundry management

* One room for clothing

* One room for teaching child care and development, family relations, management, home nursing, and home furnishing. Includes a home living center.

* In addition to the room arrangements previously described, some Home Economics departments may include auxiliary space which can be one or more of the following:

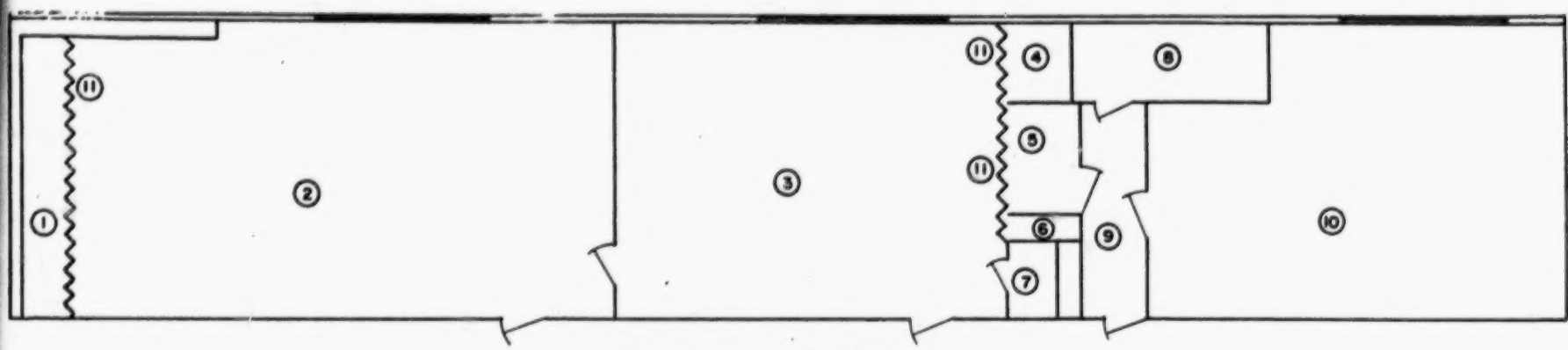
  - Teacher's office

  - Workroom

  - Combination teacher's office-workroom

High schools with large enrollments may need rooms for instruction in specific phases of the program in addition to the multi-purpose rooms previously described, for example:

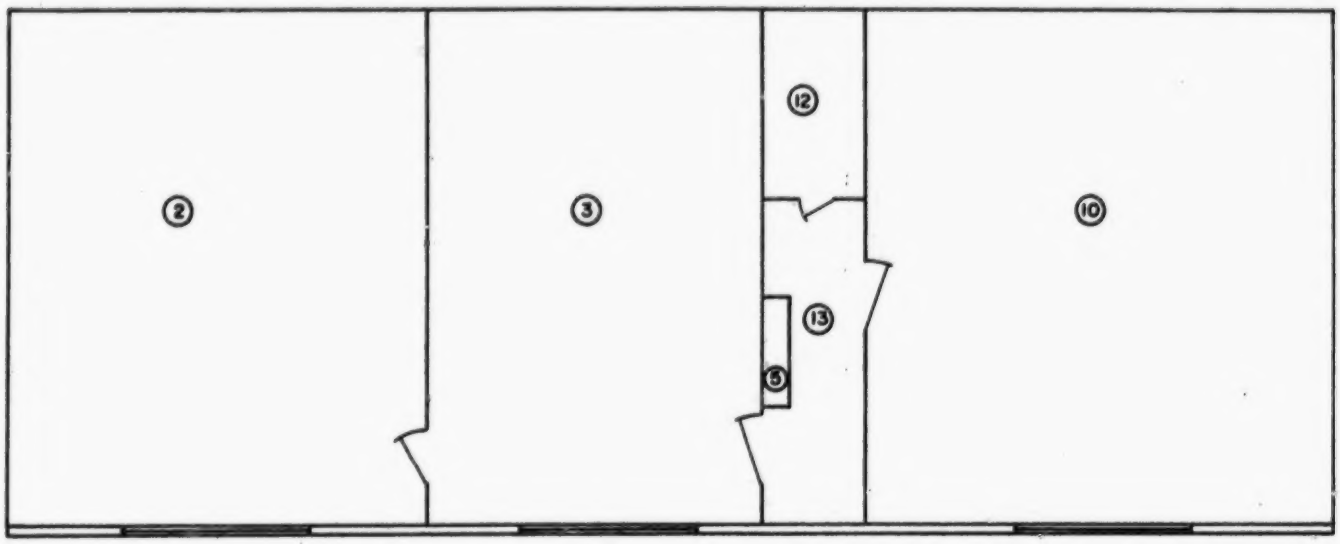
LAYOUT FOR 3 ROOM DEPARTMENT WITH AUXILIARY SPACE (3 TEACHING STATIONS)



Rutherford B. Hayes High School, Delaware

RUTHERFORD B. HAYES HIGH SCHOOL - Three-or four-teacher department with three teaching stations. Auxiliary space of office, workroom, and pullman kitchen makes possible the continuous use of classrooms. The workroom may be separated from the clothing area and used for makeup work by pupils or preparation of lessons by teachers. Pullman kitchen may be used for preparation of refreshments for social activities and preparation for a food demonstration.

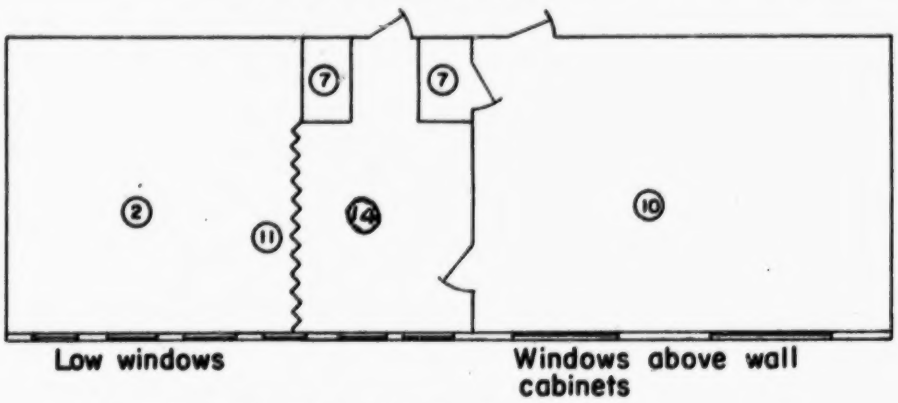
LAYOUT FOR 3 ROOM DEPARTMENT WITH FOYER



Canton Local High School, Canton

CANTON LOCAL HIGH SCHOOL - Three teaching stations. The foyer or entry affords access to the foods and family living classrooms and has storage space for pupils' books and aprons and a general storage cabinet. Pullman kitchen makes possible preparation of food for social activities and makes possible the use of family living room for community activities without interruption of activities in the foods room.

LAYOUT FOR 2 ROOM DEPARTMENT



Hilliard High School, Hilliards

1. Workroom and fitting room
2. Clothing classroom
3. Family living classroom
4. Walk in storage
5. Pullman kitchen
6. Laundry unit
7. Storage
8. Office and workroom
9. Entrance
10. Foods classroom
11. Wooden folding door
12. Girls lavatory
13. Foyer
14. Family Living Center

HILLIARD HIGH SCHOOL - One-or two-teacher department with two teaching stations. Combined clothing and family living center separated by modern folding door in a multi-purpose classroom.

ILLUSTRATION III

FLEXIBLE USE OF SPACE

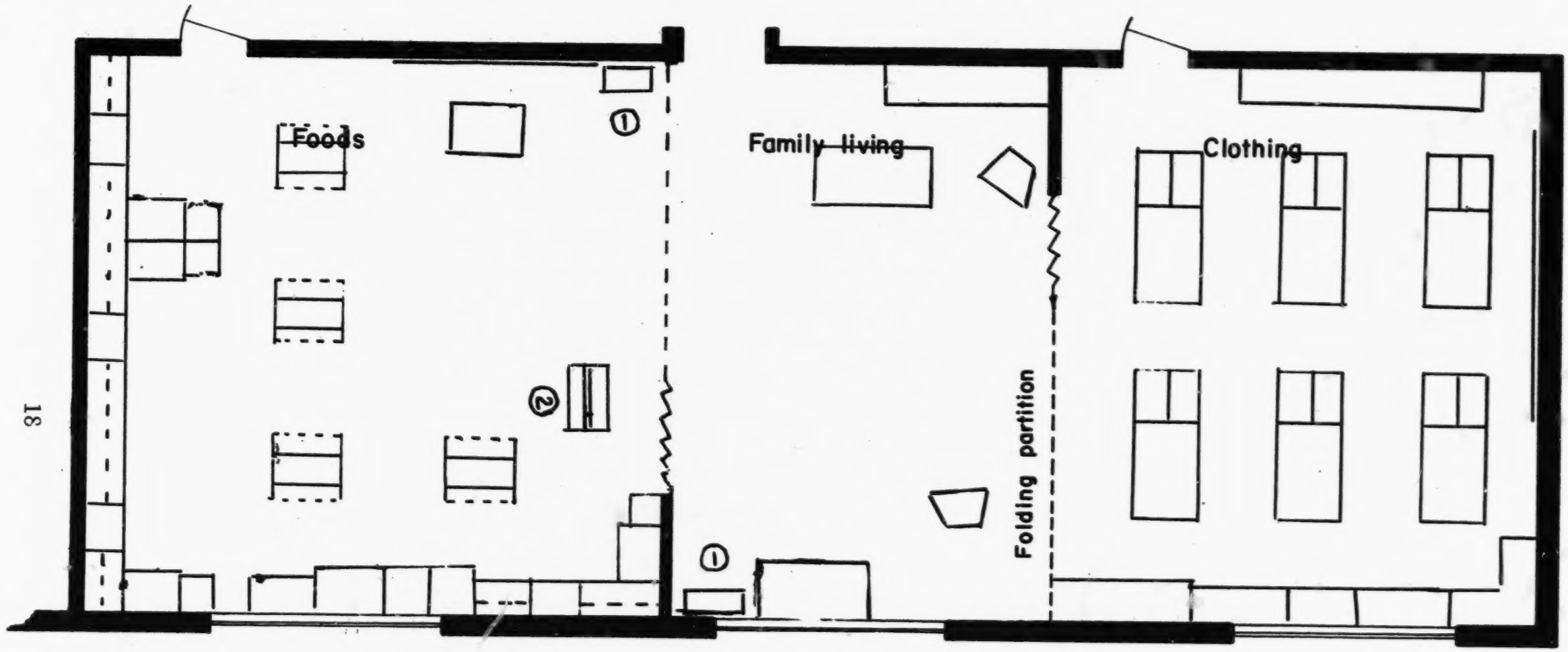


ILLUSTRATION IV

Folding door and movable partition make possible the use of space in family living and clothing room for large and small group meetings. Each area can be used alone or the entire space within two rooms can be made available. Peripheral arrangement of fixed equipment frees center floor space. Use of mobile bookshelves (1) and movable demonstration unit (2) increases flexibility in the use of the department.

* All purpose Homemaking room - designed and equipped specifically for teaching Home Economics to pupils in special education classes

* In child development, a nursery school

* In home furnishings, a special room for teaching home decoration, remodeling furniture, slipcovering, and making draperies

A Forward Look in School Planning is the Use of one Large Space for the Home Economics Department

Rather than rooms of fixed size, greater versatility is offered by using movable partitions, non-load-bearing walls or folding doors to divide the space in the department into large or small areas as needed to accommodate changing patterns in programs, in scheduling, or in enrollments.

Illustration IV shows a plan with flexible use of space. In this plan, the center area is free, and movable partition and folding door are used to adapt space for various needs. The space may become one large area, the three areas may be used separately, or the center area may be combined with either side.

PART IV

GENERAL FEATURES OF ACTIVITY OR WORK CENTERS IN THE HOME ECONOMICS DEPARTMENT

CHILD CARE AND DEVELOPMENT

Activities

Observation of children, a playschool (optional), study, reports, discussion, demonstrations, observation of films and filmstrips, and experience in feeding and clothing the child.

Location and Space

Either a family living classroom or a clothing multi-purpose room is a desirable place for the study of child care and development, and the observation of children. Both settings may be easily converted into a playschool or used for observation of children by merely clearing the floor space needed for these two activities.

If possible locate the child care area near toilet facilities and accessible to an outside entrance.

Facilities

The furnishings and equipment used for class discussion, study, and demonstration in family living or clothing area are needed.

If a playschool is part of the program, the following teaching materials are desirable: phonograph and records, tape recorder, easel, books, blunt scissors, paper, paste, crayons, modeling clay, films, toys illustrating each developmental stage in child growth, low hooks for teaching child to hang up coat.

Other equipment that is desirable, but that may be borrowed: low tables and low chairs or stools, wheel toys, blocks, life-sized doll, bathinette, collapsible basket.

Storage

Regardless of location, adequate storage is necessary. Low cabinets with removable doors may be used for a temporary depository of books, toys, etc. and may be available for other purposes later. Additional storage space may be supplied by a tall cabinet in the room for teaching materials. Walk-in storage adjacent to the space in the classroom used for the playschool may be used for the bulky equipment and for supplies when not in use. (Care should be taken not to tie up too much shelf space with materials used in the playschool. Much of this equipment may be borrowed when the school is in session so that only temporary space is needed.)

CLOTHING AND TEXTILES

All phases of clothing, including clothing selection, care, construction, and personal grooming.

Activities

Discussion, observation of films, demonstrations, study, experimenting with textiles, colors and fabrics, construction of garments (which includes sewing, pressing and fitting), and hand laundry.

Space

Flexibility is important. All equipment and furnishings should be selected with the thought that the facilities will be used for activities other than clothing construction. Sewing machine tables (self-contained units) are undesirable because they limit the use of floor space. In general, furniture that can be arranged and organized to carry out the wide variety of activities mentioned above should be selected.

In some cases, space for teaching clothing is a multi-purpose room designed and equipped mainly to teach clothing construction, selection, and grooming. In other departments the multi-purpose room used for clothing has an alcove or recessed area or an extension for a family living center. The arrangements will depend upon the number of teachers and the space allowed for the department and the size of classes. When an all-purpose room is used, the space for teaching clothing may be used inter-changeably for teaching other phases of Home Economics. (Generally approximately 1,000 square feet is considered to be a minimum space requirement for a multi-purpose room used for clothing.)

Clothing Construction Area

Equipment for clothing construction arranged in relation to point of use prevents congestion in the room. Possibilities for arrangement of sewing equipment are:

* A unit arrangement of equipment that includes a table (work surface) for four students, and two sewing machines adjacent to the table, with pressing facilities nearby, confines sewing activities within a limited area and promotes good work habits.

Pressing Equipment

Pressing facilities include steam irons, two portable ironing boards, a skirt board, sleeve board, and pressing hams. Allow one pressing area for each 8 students. Cabinets for pressing equipment may be distributed around the room and still be strategically near the work tables. Compartments for storing irons should be lined with asbestos.

Folded portable and adjustable ironing boards are 62-1/2" x 15" x 4". The storage cabinet is 24" deep.

Instructional Facilities

Bulletin, peg, and chalkboards are all important in the clothing room. Although fixed rather than portable boards are preferable, when wall space is not available, provide portable facilities. A teacher's desk and filing cabinet will also be needed.

Storage

* Tote Trays: Plastic tote trays that fit into especially designed cabinets (48" or 36") and into work tables when in use, provide an orderly arrangement for students' materials and equipment. To plan total number of trays needed, estimate the number of students taking clothing construction at one time, plus several trays for class projects that require storage.

  The maximum height of storage for the tote trays in cabinets is 60". The approximate size of the tote trays is 19-1/2" x 13-1/2" x 14-1/2" or 17-1/2" x 15" x 5".

* Wardrobe: Cabinets equipped with adjustable rods and fixed shelves provide storage for garments completed or under construction. Allow 2 inches for each garment in estimating the amount of storage space needed.

* General: Cabinets are needed for the storage of teaching aids, books, illustrative materials, swatches of materials, film strips, additional sewing supplies, and extra equipment. Increased emphasis on consumer problems brings a need for more storage than was formerly considered necessary. Many times materials used require only temporary storage. Part of the storage in a clothing room can be supplied through movable cabinets 36" in height. These cabinets, multi-purpose in use, can be moved to different parts of the room for cutting surfaces or for dividing the room into different work stations. When not in use, these cabinets can be pushed into walk-in storage or used for storage of project materials in child care, home furnishings, etc.

* Another arrangement may be a pull-out machine located in a cabinet 36" high along the wall in the sewing area. A cabinet on one side of the sewing machine has storage for skirt board and sleeve board and other pressing supplies. Another cabinet, on the opposite side, furnishes storage for tote tray and needed sewing supplies. The counter top of the cabinet and a table adjacent to the machine may be used for cutting and sewing. In some cases a pull-out board in one of the cabinets supplies the necessary work surface.

A minimum of 5 feet between tables permits students to pull out chairs and be seated without bumping each other and permits the teacher to supervise. Each sewing machine and chair requires a minimum of 3 feet.

Dressing and Fitting Area

Space for fitting should be a part of the total clothing area, rather than a separate area, so that fitting can be easily supervised by the teacher and observed by the class. Full-length mirrors in triplicate arrangements on cabinet doors or on walls or a movable triple mirror, offer the best solution to fitting problems because they facilitate seeing the garment from all sides. To make sure that girls being fitted cannot be seen by passers-by in the corridor, a folding door or a screen or other device gives necessary privacy.

Grooming Area

A separate grooming area in the department is a questionable expenditure of space and money. Grooming can be taught effectively by using the sink plus the full-length mirrors in the clothing room. If a demonstration unit is available, the overhead mirror can be used more effectively for demonstration purposes than the mirror in the grooming unit.

The cabinet base for the sink furnishes storage for grooming supplies and materials.

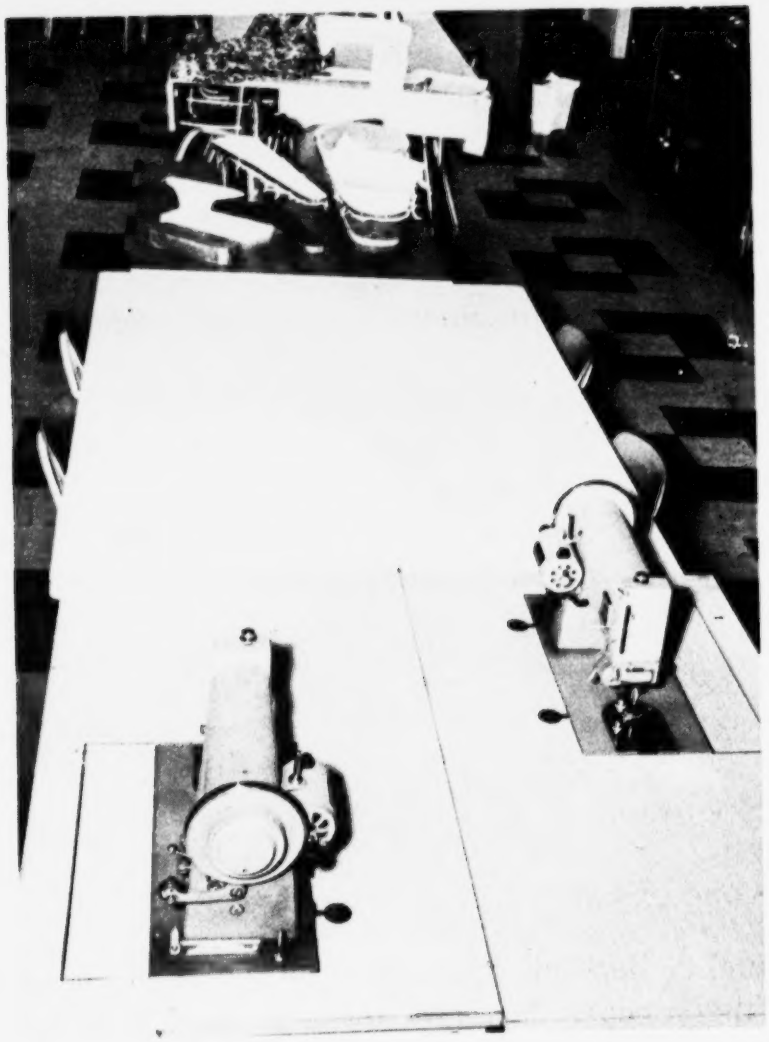
Furnishings and Equipment

The table most suitable for the clothing center is 30" high (40"x60"), with ample knee space when tote trays are in place and with work space sufficient for 4 students. Additional cutting surface can be obtained through the use of cabinets 36" high, folding sewing tables, or portable tops that can be used to enlarge the table and stored when not in use.

Sewing machines (one machine for two girls is recommended) may be regular cabinet type; pull-out machines in wall cabinets; portable machines that may be stored and brought out as needed. Sewing machines are the following sizes:

	Width	Length
Electric, closed	16-1/4" - 19-5/8"	34-1/2" - 43-3/4"
open	16-3/4" - 17-5/8"	43-3/4" - 46-1/4"
Pull-out, open		38"

CLOTHING CONSTRUCTION WORK CENTERS



Unit organization of equipment, table sewing machines and pressing equipment. Pressing equipment is a part of the work center.

Pull-out sewing machines located along wall underneath window with pressing facilities nearby.

ILLUSTRATION V

SUGGESTIONS FOR EQUIPMENT FOR CLOTHING LABORATORY

Small Equipment

* Irons - dry and steam, combination preferred, one iron per ironing board
* Buttonholers - 2 or 3 per class
* Point Presser
* Pressing hams - one for each pressing center
* Pounder
* Pressing cloths
* Sleeve boards - two
* Skirt board - one or two
* Scissors - number depends upon whether the pupils have their own or are furnished by the school. If school owns them, need two pairs for each group of four or six
* Pinking shears - one pair for each group of four or six
* Hem markers - three or four per class
* Yardsticks and rulers - four or six per class
* Tape measures
* Tracing paper, tracing wheels, chalk

Miscellaneous Equipment

* Fabric swatches - one-half to one-yard lengths
* Fitting shells - desirable but not necessary
* Illustrative materials on clothing buymanship and construction
* Teaching aids - films, slides and film strips relating to clothing, pamphlets, charts and posters on clothing buymanship and construction processes
* Supplies and equipment for teaching cleaning and repair of clothing

Grooming Equipment

* May be brought when needed

CLOTHING CLASSROOM

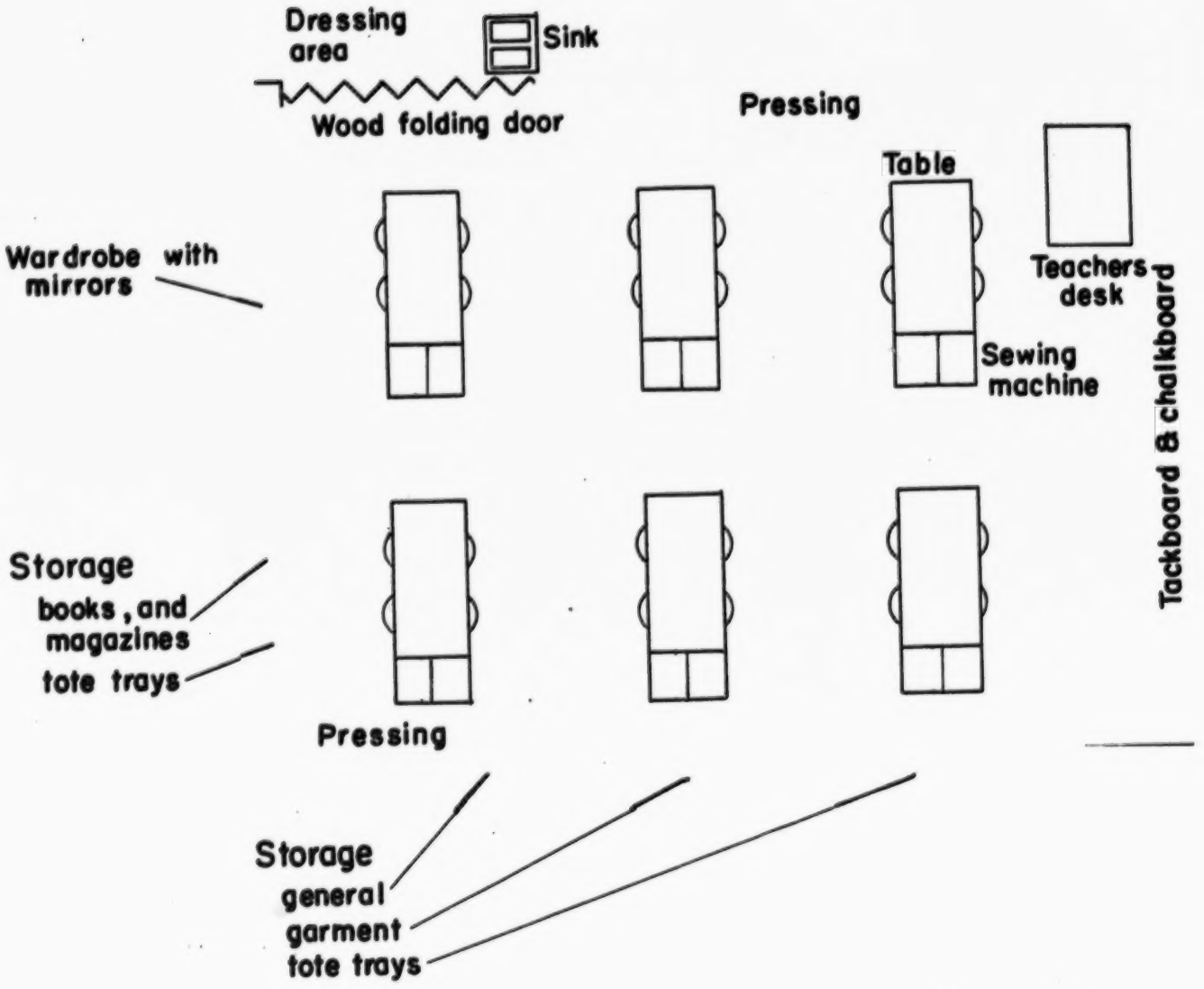


ILLUSTRATION VI

The above diagram illustrates the following features in relation to arrangement of equipment and furnishings:

* Fitting and dressing area adjacent to each other
* Sink located near triple mirror may be used in demonstrations on grooming
* Space for fitting is a part of the total area
* Unit arrangements of equipment for sewing
* Pressing centers located in relation to work centers
* Tote trays in two locations
* Wardrobe and garment storage in two locations
* Instructional features include the teaching center, storage for books and magazines, and a chalk board
* Use of a folding door to insure privacy

DEMONSTRATION CENTERS

Demonstrations are used in teaching all phases of Home Economics. Therefore, it is important to plan space for demonstration purposes within the foods, clothing and family living areas. Equipment that is movable makes it possible to give a demonstration in more than one of the areas in the Home Economics department.

Basic Requirements for a Demonstration Center

* Seating is accessible for entire class
* Seating arrangement provides good visibility
* Supplies and equipment are within reach of the demonstrator
* Chalk board is adjacent to or within the demonstration center

Facilities for demonstrations

* A special demonstration unit which is a movable base cabinet equipped with either a fixed or removable mirror. The cabinet has space for storing supplies and equipment used in demonstrating. A removable mirror makes possible the use of the base cabinet for purposes other than demonstration. The mirror can be stored, and the cabinet may be a part of a unit kitchen and furnish additional work space and storage or it may be used for general storage purposes.
* A unit kitchen with either a peninsular or island arrangement serves as a good food demonstration center. Either arrangement provides good visibility and allows the demonstrator to face the class while working. When a unit kitchen is used for both laboratory and demonstration purposes, duplication of equipment and utensils is desirable.
* Unit organization of table, sewing machine, and pressing equipment for demonstrations in clothing construction prevents wasted time and motions. The height of the table used should permit the demonstrator to sit while working. A reflecting mirror mounted on the table also gives good visibility.

FAMILY LIVING

Home furnishings, home nursing, home management, child care, family relations, hospitality.

Activities

Discussions and demonstrations, selection, care and arrangement of furniture, play school, observation of children, and social activities.

DEMONSTRATION CENTERS

Laundry

Foods

ILLUSTRATION VII

The above demonstration centers have the following features:

* Seating accessible for entire class
* Good visibility
* Demonstrator may face class

Other activities may be teacher-pupil conferences, observation of films and film strips, individual make-up work, student committee meetings (depending upon school policy), community group meetings, and meetings of family life classes in adult education.

Space

The family living center may be:

* An alcove or recessed area in the clothing area
* A separate extension beyond the clothing area
* A separate room

A multi-purpose room used for both clothing and a family living center should feature flexible use of space and equipment. Equipment that can be easily moved and is multi-purpose in use may be used over and over again in different activities. A modern folding door separating the clothing area and family living center makes versatile use of available space. With the door open, the room becomes one large area; with the door closed, two separate spaces are available for use at the same time.

A separate room used for teaching family living is planned only for large teaching centers, where two or more teachers are employed. Justification for a separate family living classroom is based on enrollment, the number of teaching stations needed and the use made of the room. When a family living center is a separate room, it should be planned for multi-purpose use and should be large enough to accommodate classes of at least 24 students for discussion and observation.

As well as serving as a hospitality center for the Home Economics department, it furnishes space for teaching care and arrangement of furniture, for a play school, and for discussion classes in child development, personal and family relations, and home nursing.

Continuous use is possible through using this room for informal groups, such as committee meetings, teacher-pupil conferences, adult education meetings, student make-up work, and as a center for social activities in the department and the school.

Facilities

Furniture and furnishings should create a home-like atmosphere. A sofa and chairs, or similar seating arrangement may be used. End tables, lamps, planters and other accessories help to make the room more attractive. Some pieces of furniture may be dual-purpose, such as sewing machine in an attractive cabinet, a drop-leaf table, book shelves, and teacher's desk.

Facilities are needed for teaching units in child development, personal and family relations, and home furnishings, as well as for clothing, when the family living and clothing areas are included in one room.

Folding tablet-arm chairs for discussion classes may be stored either in the room or nearby when not in use. Folding tables may be useful to supplement space for work and study. A teacher's desk, chalkboard, bulletin board, and a file are needed for the teaching center.

A pullman type kitchen within the area is advantageous, providing facilities for social activities without interrupting regular classes.

Storage

Storage cabinets for the family living center should include:

* 36" - 48" cabinet (general storage - number will depend upon class enrollment)
* 36" - 48" cabinet (includes file cabinet, storage for charts and other illustrative material)
* 36" - 48" cabinet (for materials used in teaching home furnishings. The need for this cabinet will depend on the units taught in home furnishings and available space in the walk-in storeroom)
* 48" cabinet (for home nursing supplies)
* 24" Cabinet (for cleaning supplies)
* 24" teacher's cabinet
* Space for child care and development supplies (see page 21)

The number and type of cabinets depend on the space available, the program taught, and the use made of the room. Some cabinets may be used for dual purposes. Location of walk-in storage near this area eliminates the use of some wall cabinets. Open shelves near the entrance for pupils' books help in keeping the room orderly.

FOODS AND NUTRITION

Foods, nutrition, laundering, and certain phases of management (selection of equipment, kitchen arrangements)

Activities

Preparing and serving meals on a family basis, preparing specific foods, preserving foods (canning and freezing, depending upon the community), preparing and serving foods

for special occasions (depending upon facilities provided in the school), caring for food, use and care of laundry equipment, class discussions, demonstrations, and observation of films.

Space

Flexibility in the use of space and the arrangement of equipment is highly desirable. Free areas available in the center of the room for total class experiences as well as small groups need to be planned. A peripheral arrangement with a minimum of fixed equipment extending out into the room promotes flexibility and frees center floor space.

Teacher visibility is better when upper cabinets do not extend into the room as dividers. Permanently walled-in areas within the room limit flexible use of space.

It is estimated that approximately 1200 square feet is needed for teaching the above activities in the foods classroom.

The amount of space needed for unit kitchens in the foods area will depend on the number of pupils in the largest class and the way the class is organized to work. If part of the class is engaged in food preparation and part in related activities, the number of unit kitchens needed will be less than when all students in the class are preparing foods at the same time.

Unit Kitchens (4-6 recommended)

Each unit kitchen is arranged similar to a home kitchen, with sink, range, base and wall cabinets, and table and chairs. Ten to twelve lineal feet of work surface, excluding sink and stove are recommended.

Appropriate storage of utensils, linens, staples for preparing and serving family meals will be supplied in each unit kitchen. Wall cabinets should be placed in relation to work centers. Each unit kitchen should include a sink center, a range center, and a mixing center. Research by Mildred Moore from the University of Illinois recommends the desirability of two mixing centers. Two centers makes it possible for four girls to work without interference and to avoid delay in getting out necessary equipment and supplies.

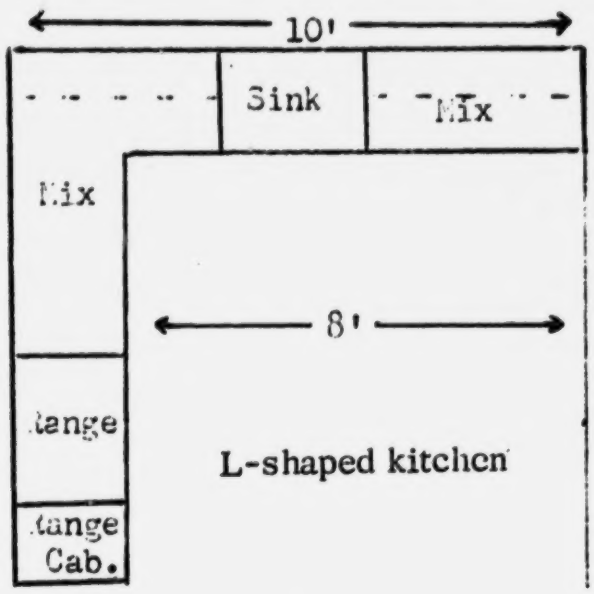
The following linear measurements for the different work centers are recommended by Moore:

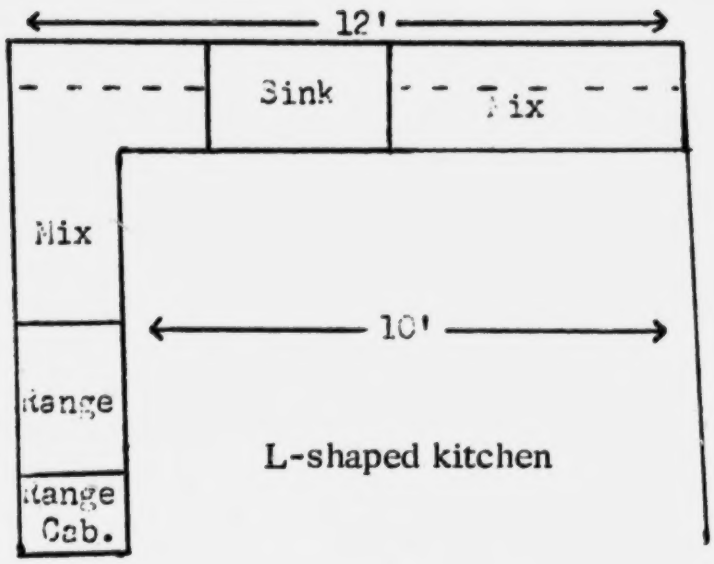
* Range center - an 18" base cabinet (preferably at left of range)
  A range

* Sink center - a 32" cabinet with double sink
  An 18" right sink base cabinet
  a 24" left sink unit

* Two mixing centers - (at either side of the sink preferable)
  An 18" base cabinet
  A 24" base cabinet

KITCHEN ARRANGEMENTS USING RANGE





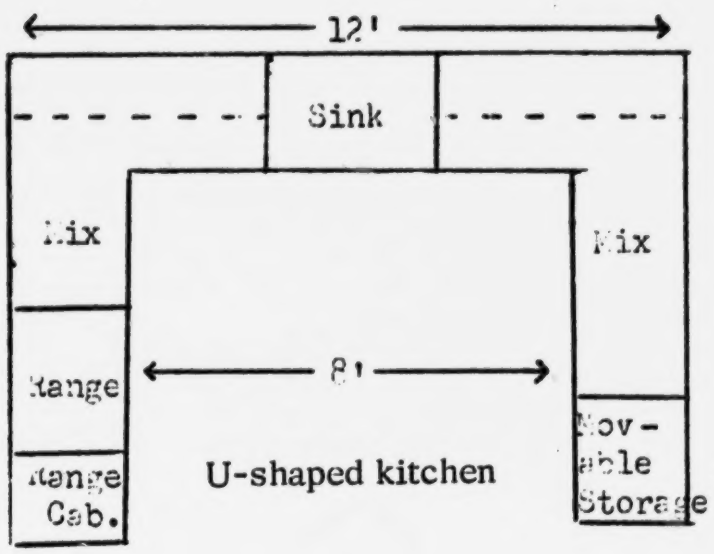
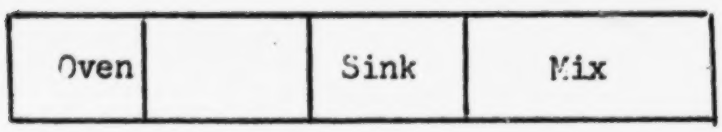
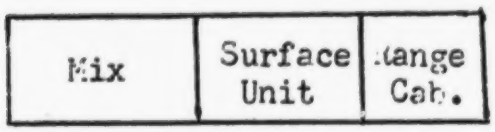


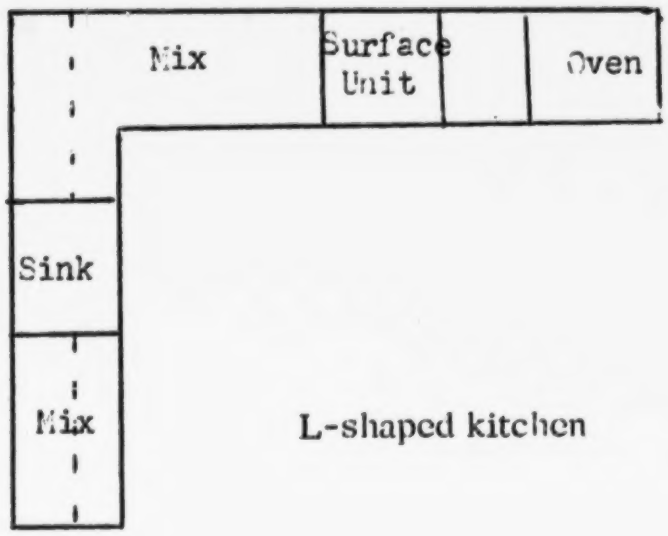
ILLUSTRATION VIII

KITCHEN ARRANGEMENTS WITH BUILT-IN OVEN



Corridor kitchen





L-shaped kitchen

ILLUSTRATION IX

Diversification in unit kitchens through use of a variety of cabinet and counter materials, different range models, different fuels, and various kitchen arrangements provide opportunity to learn kitchen planning as well as use, care and selection of equipment. One unit kitchen might be equipped as an appliance center with a control panel installed for operating the following electrical appliances; fry pan, sauce pan, portable oven, and dishwasher.

A unit kitchen that is used mainly for demonstrations should have a disposal unit, a dishwasher, with a chalkboard, tackboard, and refrigerator nearby.

Unit Kitchen Arrangements with Built-In Units and Ovens

Locating built-in ovens:

* Put the built-in oven where it will not interfers with continuous counter work surface. It may be, but need not be, in the continuous work counter area.

* Allow counter space next to the oven.

* Oven and surface units may be vented from a location on an inside or outside wall. It is less expensive to vent from an outside wall location.

A built-in oven should be installed so the top of the oven door is two to three inches below the elbow.

Build cabinets above a built-in oven 22" to 24" deep. It is difficult to reach into a 12" deep cabinet above a built-in oven if it is set back against the wall.

Pull-out shelves in base cabinet below oven are convenient for storage of small appliances or large utensils.[1]

Equipment and Furnishings

Furnishings and equipment needed:

* Double bowl sink in each unit kitchen

* Ranges - gas and electric, varying sizes and types

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[1] Longbotham, Marion, and Bailey, Katherine, "Planning Your Kitchen," Circular 622, University of Wisconsin Extension Service, College of Agriculture, Madison, Wisconsin, December, 1962.

* Base and wall cabinets for each unit kitchen (See storage). In planning unit kitchens, the following linear measurements are recommended:

Base Cabinet		Wall Cabinets	
Width	24"	Width	12"
Toe Space	3"-4"	Clearance above counter .	14"-15"
		Width of door	12"-14"

* Ten to twelve linear feet work surface exclusive of sink and range

  - Counter space per pupil (linear) 30"
  - Height of work surface 32-36"

* Garbage disposal and dishwasher should be in at least one unit kitchen

* Clearance of at least 14" between base and wall cabinets. Average height of base cabinet is 36". Pull-out shelf at 32-1/2" from floor is desirable.

* Tables and chairs - Movable tables that can be used for meal service and lend themselves to both small and large group arrangement for discussion and other activities make the room flexible. A table 36" x 60" serves six people. The recommended height is 29" - 30" high. Tables may have drop leaves but should be movable with undue effort.

* One or two refrigerators (usually one refrigerator is allowed to each three kitchens, depending on size of class and amount of storage needed for perishable foods).

* Freezer (depends on amount of food preservation taught and storage needs for frozen foods) or combination refrigerator-freezer.

* Ten lineal feet of chalkboard and 8-10 feet of pegboard.

Storage Needs (Other than in the unit kitchens)

Facilities will be needed in the foods classroom for storage:

* 24", 36" or 48" tall cabinet, depending upon amount to be stored (for extra supplies and equipment, additional china, glassware, and silver needed for special occasions)

* 36" base cabinet (for small electric appliances not stored in unit kitchens)

* 24" cabinet (for pupils' aprons)

* Bookshelves 12" deep with nine books stored for each linear foot (for pupils' books)

* 18" - 24" cabinet (for cleaning supplies)

* 24" - 36" base cabinet (for laundry supplies)

Central location of storage cabinets will save time and energy of both students and teacher. Facilities for storing pupils' books and aprons near the entrance avoid congestion and wasted time at the beginning and end of a class period.

HOME FURNISHINGS AND HOUSING

* Selection, arrangement and care of furniture and furnishings

* Care and maintenance of the home

* Renovation of furniture

Activities

* Experimenting in arrangement of furniture, furnishings and accessories

* Experimenting in developing household skills

* Comparing features in selection of furniture and furnishings

* Giving demonstrations

* Making accessories for the home

* Upholstering, slipcovering, refinishing furniture (these activities are more appropriate for adult classes, classes in occupational training, or special interest classes in interior decoration)

* Having class discussions

Space and Location

* This area is best located in the family living center. (See page 15)

* Other locations may be a clothing room or a classroom. The use of these rooms for teaching home furnishings requires much improvising to supply the necessary teaching aids and facilities.

* When located in a family living center, wall space is needed for placement of furniture and arrangement of accessories to teach room decoration.

* Flexible arrangement of equipment and furnishings in the room or area for:

  - Experimentation in arranging furnishings and furniture
  - Doing comparative studies of furniture and furnishings
  - Upholstering and slip covering

* Special care must be taken to protect furniture and floors when space in the room is used for refinishing furniture

* A workroom or a combination workroom and storeroom especially equipped for refinishing is desirable if other facilities in the school are not available

Facilities

* Furniture and furnishings that are part of the family living center

* Accessories such as lamps, pictures, vases, and other decorative objects

* Movable panels to serve as backgrounds for experimentation with wallpaper, paint, and wall hangings

* Samples of floor coverings

* Swatches of drapery fabrics and curtain materials

* Cleaning equipment suited to the furnishings and equipment that can be stored on shelves, racks, and hooks

* Supplies for refinishing and upholstering furniture (if needed)

* A large movable peg-board panel, to which shelves can be attached, is an excellent teaching aid in home furnishings and may serve as a screen or divider

Storage

* A storeroom or storeroom-workroom adjacent to the teaching area is desirable when upholstering, slipcovering and refinishing of furniture are included in the program

* Movable storage cabinets facilitate use of necessary supplies and materials (can be stored in storeroom when not in use)

* Wall cabinets for storage of necessary materials are needed if storeroom facilities are not available

* A work bench with storage cabinet may be desirable if furniture renovation is taught extensively

HOME NURSING

* Home care of the sick

* Safety

Activities

Demonstrations, discussions, pupil learning experiences in making bed, caring for a patient in bed, preparation of a sick tray, and making articles for use in care of the sick.

Space

Taught in the family living classroom, family center in the clothing classroom, or health center in the school.

Equipment

Some equipment may be available in the department. Sometimes equipment such as a hospital bed may be borrowed for temporary use.

* Bed - one roll-away or the day-bed used in the living center

* Blocks - four, to raise the height of the bed

* Bed linen - four sheets, four pillowcases, one blanket, one mattress pad

* Towels and washcloths - two or three of each

* Pillows - two, or more if a back rest is not provided

* Laundry bag - one

* Chairs - one straight-back, one easy chair

* Table - one bedside type

* Tray and dishes - for serving a patient in bed

* Sickroom supplies - such as a hot-water bag, icecap, washbasin, pitcher, pail, clinical thermometer, drinking glass, drinking tube, and waste container

* Medicine cabinet - equipped with first aid supplies, such as adhesive tape, bandages, cotton, antiseptic for cuts and scratches, and application for burns

Storage

Storage for linen, sickroom supplies and a roll-away bed (if used) may be in wall cabinets. A walk-in store room, when available, affords the best storage for large pieces of equipment such as a hospital bed and other sickroom supplies.

LAUNDRY AREA

Uses of Laundry Center

* Teaching
  - Selection and care of laundry equipment
  - Care of fabrics
  - Teaching principles of laundry procedure
* Service
  - Care of department linens, aprons, etc.

Activities

* Demonstrations
* Class experiences in actual use of laundry equipment
* Experiences in ironing and laundering to develop household skills, as training for household employment

Location and Space

The laundry area may be found in several different locations. Most commonly located in a foods classroom, often between foods and clothing laboratories as a separate unit, or incorporated into one of the unit kitchens (sink and work surface of unit kitchen used as laundry unit)

* Other possible locations are:
  - Clothing classroom (located near sink in room)
  - Family living classroom, if it has a home management area with a sink
* Regardless of location, the laundry center must offer adequate space for class demonstrations

* A separate room with 250-300 square feet of floor space may be practical only when training for household employment is part of the curriculum

* Laundry unit should have four work centers (preparation, washing, drying, ironing) arranged to form a continuous production line, if possible

Facilities

* Washer, dryer, or a combination washer-dryer, sink, and counter space for sorting and stain removal, and base and/or wall cabinets for storage of laundry supplies

* Equipment for ironing should be accessible - either a part of the laundry center or nearby

* Sufficient water pressure and adequate hot water

* Dryer installed so that students do not have to reach around open door to shift clothes from washer to dryer

* Equipment that can be serviced in local community

TEACHING CENTER

Each classroom needs a work center for the teacher, located in a focal point that makes supervision possible in any part of the room. The center includes a teacher's desk, one or two chairs, a filing cabinet, and a cabinet to store teaching materials, such as charts, audio visual aids, books, etc.

Adjacent to, or within, the teaching center, include a chalkboard (10-13 lineal feet). Plans for chalkboard space when wall space is at a premium are:

* Sliding chalkboard located on wall - a track along the upper wall, that allows a channel chalkboard to be hung as needed, may also be used for bulletin boards, charts and posters

* Sliding chalkboards that double as doors, on storage unit used for instructional materials in teaching center

Separate Office Area

For schools with large enrollments and teachers sharing classrooms cooperatively, a separate office space or a combination office-workroom makes possible the continuous use of classrooms for teaching.

The office area should provide space for the teachers to do lesson planning and have conferences. Furniture includes a desk, conference table, chairs, book shelves, a work table, and storage cabinets.

Combination Office - Workroom

To make best use of the department, a combination workroom-office or a separate workroom may be desirable when there are three or more teachers and there is a large enrollment in Home Economics. Uses made of this auxiliary space are:

* Conference room for students who need individual or group help
* Consultation room with other teachers
* Workroom for preparation of teaching materials
* Storage facilities for illustrative materials such as film strips, flannel boards, etc.
* File space for student home experiences

Facilities will depend on use made of the space and may include:

* Equipment such as a sink, refrigerator, range-top, counters and cabinets (if used for hospitality or for preparation for foods demonstrations)
* Portable sewing machines and sewing supplies
* Storage space for a variety of activities
* Space and equipment provided for the development of bulletin board displays and charts, demonstrations, laboratory preparation, experimentation and the like
* Tool panel for equipment and supplies for furniture projects

Location

If an office is used with multi-purpose rooms, it should be accessible from either room or the main corridor.

A workroom, when included in a department, may be separated from the main rooms by folding doors. When opened, this should become part of the instructional area as a demonstration center, an extra unit kitchen, or additional space for clothing construction.

PART V

STORAGE

Storage is so important to the successful operation of a homemaking department that it deserves careful study and planning. Not only does well planned storage achieve better use of the department, but it will also provide a desirable teaching situation. Storage aids in creating an effective setting for teaching management and furnishes opportunities for improving housekeeping practices.

Unfortunately these mistakes in storage are all too frequent:

* In the effort to duplicate a homelike atmosphere, storage fails to meet the needs of a homemaking department.
* Storage is not related to the total needs of the department. For example, provisions are made for kitchen storage, while other storage needs are neglected resulting in an unbalanced arrangement.
* Storage is unrealistic and is not planned in relation to use.
* The percentage of space used for storage is too large in proportion to the total space of the room,
* Over-elaborate and too expensive installations result in a waste of money.
* Storage is not tailored to fit needs of individual department.

The purpose of storage is more than an array of beautiful cabinets. Good storage:

* Protects objects to be stored
* Hides unsightly objects
* Contributes to energy saving
* Provides flexibility in use of space
* Provides for future changes

Storage is an individual matter. Architects, administrators, and teachers who are responsible for planning storage will need to envision:

* Activities to be included (supplies and visual aids needed)
* Supplies that need a good deal of storage space
* Use of department for adult classes and community meetings will influence storage needs

* Height and reach of individuals using storage

* Program in Home Economics (storage needs for all areas)

* Persons or groups (small or large groups) using storage (for example, the amount of equipment and storage needed for 24 pupils preparing food at one time)

Storage facilities may be provided in two ways:

* Wall or free-standing cabinets that store small or medium equipment at point of use

* Walk-in storeroom and/or pantry that stores bulky articles and large equipment

Storerooms must be carefully planned and organized for efficient and effective storage. Shelving along storeroom walls is necessary to provide complete utilization of space. Storerooms afford the best means for storing:

* Equipment for play schools and home nursing

* Supplies and equipment used in teaching consumer education, home furnishings, clothing and other units

* Portable screens, portable bulletin and chalk boards

* Movable storage cabinets

* Furniture in process of being refinished

* Seldom-used articles

Although storage in Home Economics departments needs to be tailored to fit the needs of each individual school, there are certain basic considerations important for all departments:

Wall Cabinets

* Adjustable shelves and movable partitions

  - Eliminate need for stacking
  - Make all articles accessible
  - Make economical use of total space within cabinet
  - Make space adaptable to different sizes and shapes of articles

* Easily adaptable cases

  - Stock units (cabinet frames) in various sizes can be adapted to a wide range of needs. For example, file drawers and a book compartment can be incorporated in a cabinet in one school, and for another, installation of the same type cabinet may contain a cleaning closet or ironing board compartment

* Movable cabinets (36" high)

  - Serve as storage for teaching materials that can be brought out as needed and stored when not in use
  - Can be placed as room dividers to separate certain areas
  - Cabinet with counter surface can be shifted from unit kitchen to various positions for use as a display counter, demonstration unit, or cutting area in clothing construction

* Heights

  - A height of 72" for the surface of the top shelf is the limit of comfortable reach for a person of average height
  - 36" is standard for counter tops. Different levels of work surfaces can be accomplished by pull-out shelves to accommodate short pupils and to use in mixing. 14" is usually enough clearance between wall cabinets and working surfaces

* Accessibility

  - Slant front, wall hung cabinets (bottom shelf 5-1/2"-6" deep; top shelf 9-1/2"-10" deep, so that top shelf extends farther out over the counter than the bottom shelf), step shelves, half shelves, files for knife and pan storage, revolving shelves, or shelves on doors for accessible corner storage
  - Peg-board on wall at end or back of counter for hanging much-used equipment

* Ease of cleaning

  - Smooth, even surfaces, free from cracks or spaces
  - Use of grooves rather than dowels
  - Raised floor in reach-in closet
  - Cabinets with dust-proof and insect-proof lining in backs, sides and tops
  - Well-fitted doors

Safety

* Upper cabinet doors, if hinged on one side should be open all the way back and not be more than 12" - 14" wide
* Cabinet doors should leave 18" free passage when open
* Storeroom on level with room
* Adequate light for interior of cabinet or closet
* Interior of closet finished in light color

Location

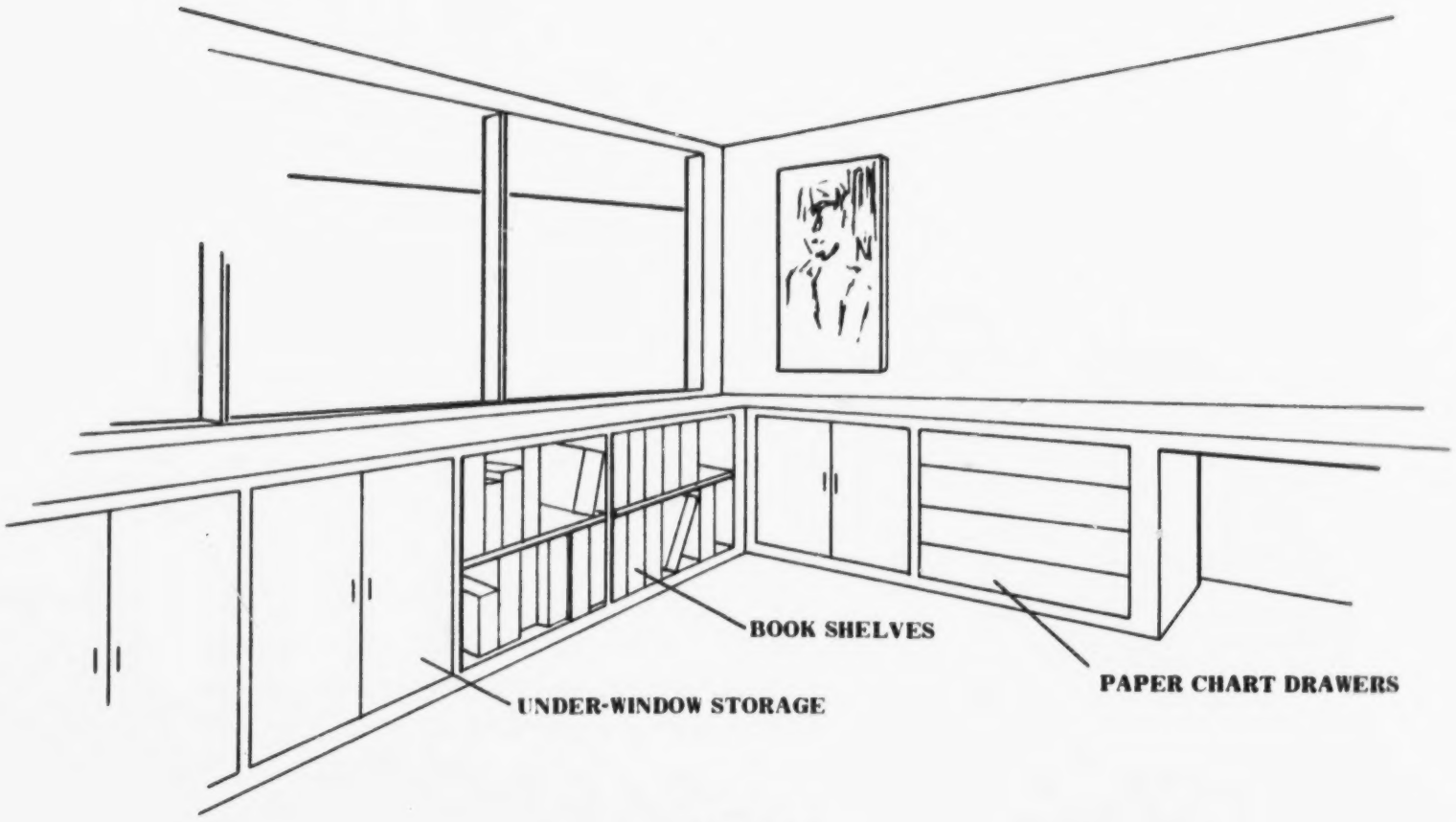
* Locate storage cabinets so that they do not obstruct the view of any part of the room. Storage cabinets located close to areas of use saves time and energy in the room. Congestion in the classroom may be avoided by not locating storage in one place in the room
* Provide closed shelving for articles that need to be protected and are little used, or may detract from the appearance of the room. Open shelves for frequently used items, such as books

Guides for Using Storage

* Make a list of supplies and teaching materials to be stored and classify to use:
  - Permanent storage (files, records, etc.)
  - Occasional or seasonal
  - Frequent usage
* Plan space best adapted to the purpose. Use every means to avoid the need for stacking, reaching, stooping, and other annoyances
* Organize equipment into work or activity centers so that all articles needed to complete an activity are in one place
* Plan so that all stored articles are easily seen, and may be removed without removing another item
* Allow for changing usage

Store in Areas of First Use

* Supplies and equipment placed as close together as practical
* Space should be provided at each work center for storage of supplies, utensils and tools used at that center



STORAGE

Illustrates the possibilities of the use of space underneath windows for storage. The extent to which space can be utilized under windows will depend upon the heating system.

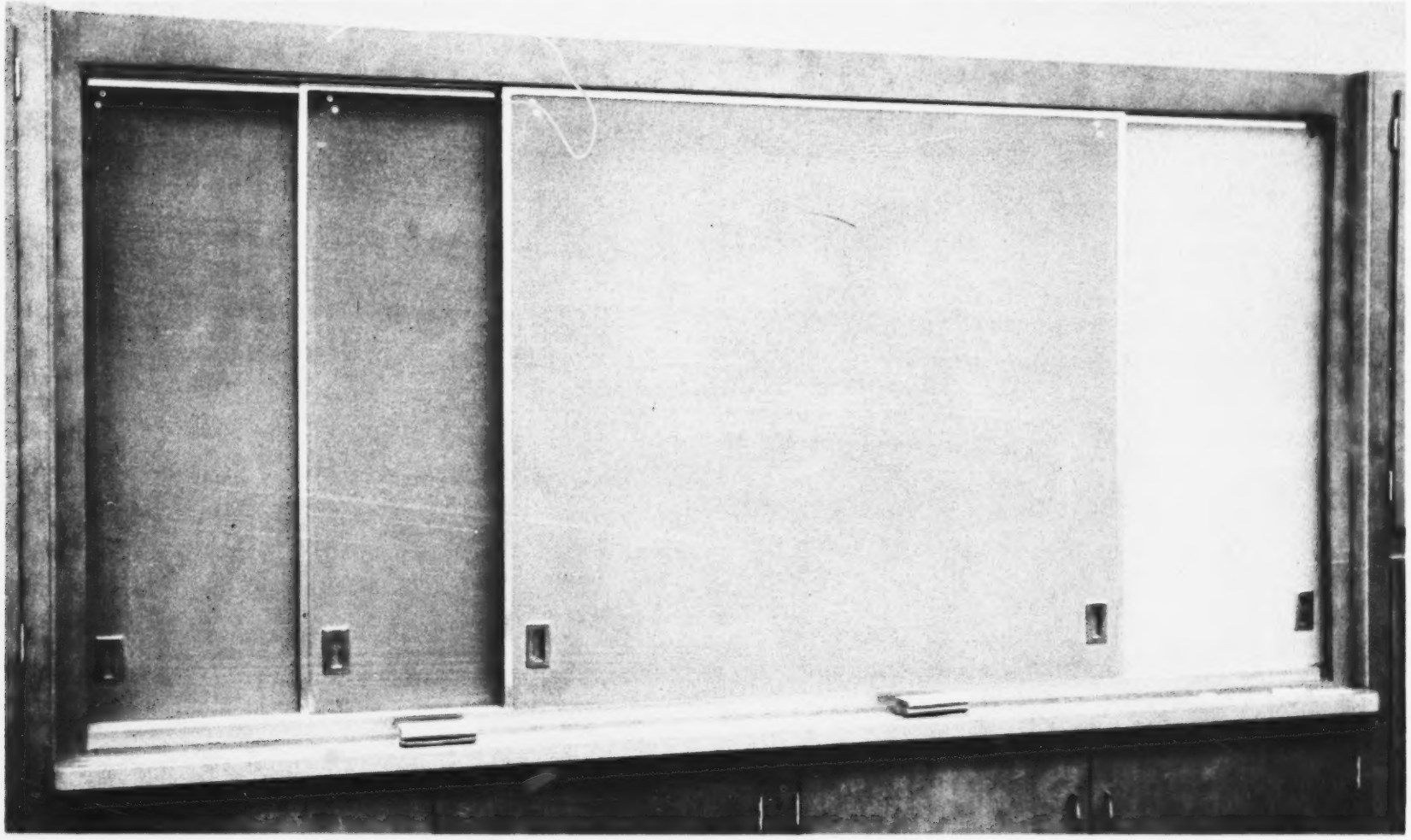


ILLUSTRATION X

The sliding chalkboard mounted on the storage cabinet provides a chalkboard for the teacher's use as well as storage for books and teaching supplies.

PART VI

EQUIPMENT AND FURNITURE

Pointers for selection of furniture and equipment for the Home Economics department:

* Visualize needs for equipment and furniture in relation to the program and the individuals using the department
* Make a complete plan for purchasing all equipment and furnishings even though all equipment cannot be purchased the first year
* Make a plan for arrangement before selection
* Consider standards attainable by the majority of those using the facilities
* Select furniture appropriate for the room for which it is to be used
* Plan for flexibility in the use of furniture and equipment
* Consider cost, keeping in mind best values in relation to money spent. Built-in's and special features cost more than stack furniture or equipment

General Characteristics of School Equipment or Furniture

* Is usually wood, metal or plastic
* Should be durable, mar-proof, strong, simple and well-designed
* Should be light weight, noiseless, and easily moved
* Should be economical and suited to the particular school
* Should be multi-purpose in use as much as possible

Desirable Features of Tables and Chairs

* Tables are movable and lend themselves to small group use or may be pushed together for discussion
* Are stackable
* May have drop leaves at each end to conserve space when not in use
* Have square corners so that they can form larger units when needed for discussion groups
* Have a durable surface
* Are multi-purpose in use

* Chairs are comfortable and promote good posture (seat 16-18" from floor)
* May be stackable, thus using less space
* Are movable and designed for flexible arrangement
* Do not produce noise
* May have tablet arm for taking notes
* Mobile cabinets (36" high) provide additional work surface
* Movable book carts
* Movable demonstration tables
* Bookcases and display boards used as movable room dividers forming side alcoves as needed
* Stackable storage cabinets
* Adjustable heights of working surfaces (base cabinets and tables)
* Colors and finishes keyed to lighting factors in the room
* Trapezoidal, semi-circular, and round tables. These can be grouped together or arranged in hollow squares, semi-circles, or serpentines
* Desks that come in any number of sizes and shapes

Measurements that May Be Helpful in Planning Work Centers

Roll-away bed . . . 40x46x24"

Storage cabinets
- Maximum height . . . 84"
- Maximum depth . . . 24"
- Maximum depth of wall cabinets . . 12"

Book shelves
- Minimum depth . .10-12"

Storage cabinets for chairs
- Width (minimum) . . 36"
- Height of unit . . . 40"

Files, standard letter size
- Depth . . . . . 24"
- Legal size . . . . 12"

Magazine shelves
- Width . . . . . 24"

Chalk board . . . 10-12 lineal feet

Tack board . . . . . 8 lineal feet

Aisle space
- In front of general storage cabinets . . . . 4 lineal feet
- Space around tables for meal service and clothing. . 5 feet

Washer and dryer, side by side. . . . . 5'6"

Child care cabinets (toys for indoor play)
- Width . . . . . .36-48"
- Height . . . . . 36"

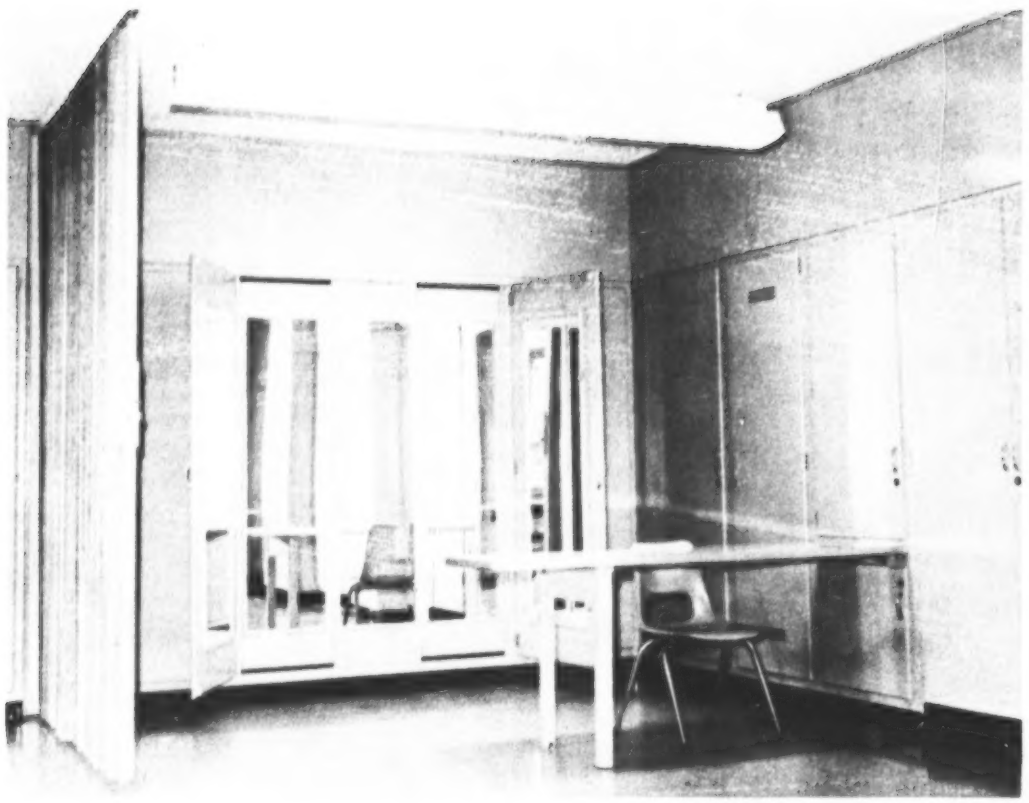
Folding tables for cutting
- In use . . . . 40 x 72 x 36"
- Folded . . . 20 x 72 x 4"

STORAGE NEAR A TEACHING CENTER

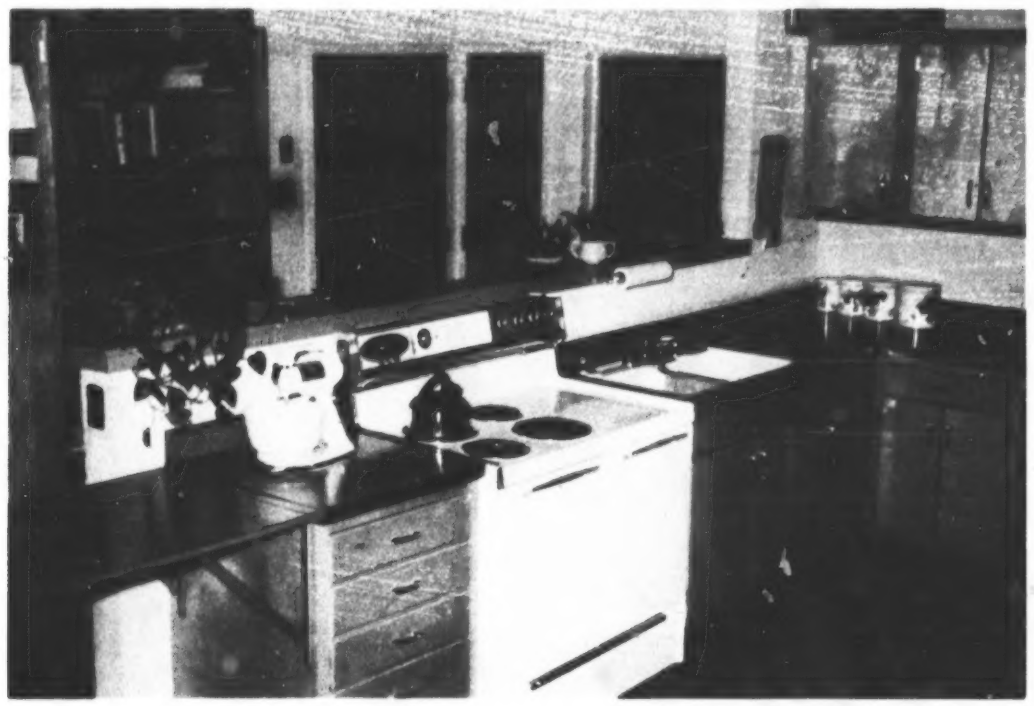
Storage near the teaching center includes files, space for magazines and charts, and a cabinet with four doors and pull-out shelves is used for book storage and other teaching supplies.

Furniture, furnishings, and equipment create a home-like atmosphere but at the same time provide a setting for learning. Use of drop leaf harvest table and pull-out sewing machines make possible the multi-purpose use of floor space.

ILLUSTRATION XI



Built-in table in a workroom adjoining the clothing laboratory. Folding wooden door makes it possible to combine the space with the clothing room or use as a separate area for individual work.



Drop leaf on cabinet increases work surface in unit kitchen.

ILLUSTRATION XII

CHARACTERISTICS OF MATERIALS USED FOR COUNTER SURFACES AND FLOORS

Characteristics	Inlaid Linoleum	Melamine Laminated Plastic	Polyester Laminated Plastic	Stainless Steel	Ceramic Tile	Vinyl Plastic	Asphalt Tile	Rubber Tile	Wood
I. Suitability for Counters									
Floors above grade									
Floors below or on grade									
II. Resistance to Stain - Acid - Alkali	good	excellent	excellent	excellent	excellent	excellent*	poor	fair	good
Heat	poor	good	fair	excellent	excellent	poor	poor	good	good
Cigarette burn	fair	good	good	excellent	excellent	poor	poor	poor	poor
Heavy impact	fair	poor	poor	poor	poor	fair	poor	excellent	fair
Color change by sunlight	fair	excellent	excellent	excellent	excellent	excellent	fair	fair	good
Moisture absorption	poor	excellent	excellent	excellent	excellent	good*	excellent	fair	poor
Cutting	fair	poor	poor	good	excellent	fair	poor	fair	poor**
Abrasion	poor	excellent	good	excellent	excellent	fair	fair	poor	fair
Grease and Oil	fair	excellent	excellent	excellent	excellent	excellent	poor	poor	good
III. Resilience	good	poor	poor	poor	poor	poor	fair	excellent	fair
IV. Quietness on Contact	good	good	good	good	poor	good	fair	excellent	poor

*Vinyl from one manufacturer has a special backing which is unaffected by moisture and alkali.

**Though resistance of woods to knife cuts is poor and appearance of counter is damaged, wood is the best material for a cutting block because it does not dull knives as much as other materials.

PART VII

ADDITIONAL FEATURES

Atmosphere in the Home Economics Department

The Home Economics department should be attractive and homelike without sacrificing efficiency or a workmanlike atmosphere. To insure harmony, all colors should be planned as an ensemble. The same art principles as in a home can be applied. Remember that intensity and value are just as important as hue in the selection of background colors. Since all departments are planned for both daytime and evening use, colors should be tried out under both lighting conditions to insure best effects.

Architects contend that the color plan for any department should be selected in accord with the general character of the building, rather than following the personal preferences of one or two persons. Since the planning of Home Economics quarters is a long-range program, it is important to use the architect's professional skill and work with him in the selection of color and theme for the department's walls and floor. The furnishings and furniture for the rooms may be planned around this background.

LIGHTING

Light control in the classroom should insure the pupils' comfort as well as efficiency. Specialists recommend as an absolute minimum an illumination of 50-foot candles for classrooms. For sewing on dark materials, more light is needed. The illumination in the foods and clothing rooms should meet the standards of the building codes for these particular rooms. Although it is recommended that lighting be primarily controlled by electrical means, the control of natural light should also be considered. Equipment should be arranged so that pupils do not face the light while carrying on visual activities. Natural lighting in the classroom should be controlled by the following means:

* Drapes

  - Effectively eliminate distracting light
  - Mounted so that they are easily manipulated
  - Easily cleaned
  - Durable and resistant to fading
  - Occupy minimum wall and window space when not in use

* Shades

  - Easy to clean
  - Trouble-free system of raising and lowering
  - Effectively eliminate outside light

Special requirements for lighting may be:

* Over the sink
* Counter area
* Under cabinets
* Demonstration area
* Above bulletin board

FLOORS

Rooms where food service and laundering are done require special consideration. They must be greaseproof and not show stain and should be easily cleaned.

Floor materials being used in Home Economics departments are usually asphalt tile or plastic. (See chart for use)

COUNTER SURFACES

In selection consider: (Also refer to chart for use)

- Cost
- Suitability
- Resistance to stain
- Resistance to heat
- Resilience
- Quietness to contact
- Color

WIRING

Start the planning for wiring needs in the Home Economics department with a list of electrical equipment and appliances to be used and their general location. Plans for electrical requirements should take care of both present and future needs. The number of electrical appliances used in the Home Economics department will no doubt be increased. The use of teaching machines, television, and audio-visual aids will also add to the need for more current in the future. Therefore, it is important to plan for a generous amount.

The architect needs to be informed concerning electrical and circuit needs for the department. The following suggestions for wiring may be helpful:

* For safety's sake, circuits in the Home Economics department should be controlled by circuit breakers.

* Outlets on all sides of the room should be provided.

* Location of outlets will depend upon the use made of them. In unit kitchens, outlets are placed 10-12 inches above the work surface.

* Provide one double outlet for plug-in appliances in each unit kitchen. Each single outlet for plug-in appliances should have an individual circuit and be protected by its own circuit breaker.

Following is a chart showing suggested distribution of circuits: [1]

Types of Circuits	To Provide Power for	Minimum number and Size of Circuits	Capacity of Each Circuit
General purpose circuits	Lighting and convenience outlets	One 15-amp circuit for each 375 sq.ft. (No. 14 wire)	1800 Watts
		One 20-amp circuit for each 500 sq.ft. (No. 12 wire)	2400 Watts
Small appliance circuits	Convenience outlets serving 120-volt small appliances	Two 2-wire circuits or	2400 Watts
		One 3-wire circuit	4800 Watts
Special purpose Circuits	One piece of major 120- or 240-volt equipment	One for each piece of equipment	Depends on individual appliance

[1] The National Wiring Bureau, "Full Housepower--Efficient Electricity in the Home," Teachers Library, Inc., New York, New York.

Appliances (230 volts)

electric range
built-in oven
surface unit
electric washer and dryer (combination)
electric dryer
electric water heater

Appliances (115 volts)

irons (steam and dry)
washer
toaster
portable oven
food waste disposal
french fryer, sauce pan, etc.

SMALL EQUIPMENT FOR FOOD PREPARATION

I. Equipment to be located in a unit kitchen for the use of four girls.

A. Basic equipment

Cannister set
2 sets of mixing bowls (nests of 3 or 4)
3 or 4 straight side saucepans (1-1/2 qt., 2 qt., 2-1/2 qt.)
1 cast iron or cast aluminum skillet with lid (11")
1 casserole (1-1/2 qt.)
2 layer cake pans (8")
2 pie pans (8")
2 muffin pans
2 cookie sheets
1 loaf pan (metal or glass 10 x 5")
1 pancake turner
2 paring knives
1 slicing knife
1 floating blade knife (potato peeler)
1 wide spatula
2 small spatulas (4" blade)
2 cooking forks
1-2 rubber scrapers
1-2 pastry blenders
2 cooling racks
1-2 flour sifters
1 strainer (wire mesh)
1 set biscuit cutters
2 sets measuring spoons
2 glass measuring cups
2 wooden spoons or 1 set
1 large spoon with slotted bowl
1 grater
2 rolling pins
4-6 custard cups
1-2 serving trays (12"x15")
2-4 teaspoons
2-4 tablespoons
Salt and pepper container
Refrigerator dishes
1-2 rotary egg beaters
Pot holders
2 dish cloths
4 dish towels
1 dish drainer
1 vegetable brush
1 pot scraper
1-2 cutting boards

B. Suggested equipment which can be added in the unit kitchen

Kitchen shears
Tubular cake pans
Casserole of a different size
Wire whip
Tea pot
Pastry brush
Bottle and jar opener
Potato masher
Portable mixer
Double boiler (each part usable as a saucepan)
Pint glass measuring cup (this may be substituted for one of the one cup glass measuring cups)
Juice reamer
Glass baking dish (13")
Tongs
Pastry cloth
Blending fork (may be substituted for one of the pastry blenders)
1 small skillet

Here are some questions which may help you decide which of the above items to have available in each unit kitchen rather than in general storage.

1. Will the item of equipment save time and energy if located in the unit kitchen?

2. Will the item of equipment be used frequently?

3. Is the space available to store the additional items of equipment in the unit kitchen?

4. Can the additional cost of having the item of equipment in the unit kitchen be justified?

II. Equipment for food preservation

The amount and kind of equipment needed for teaching food preservation will vary with the local situation. The following are some kinds of equipment which may be needed:

Various types of containers and packaging materials for freezing
Wire baskets for blanching
Water bath canner with a rack
Pressure cooker
Glass jars
Jelly glasses
Jelly strainer
Tongs for handling jars

III. Meal service for each unit kitchen

A. Basic equipment

6 dinner or luncheon plates
6 salad plates
6 bread and butter plates
6 cups and saucers
6 soup or cereal bowls
1 medium platter
2 vegetable dishes
1 set salt and pepper shakers
6 water glasses
6 juice glasses
place mats
1 pitcher
6 teaspoons
6 soup spoons
1 butter knife
3 tablespoons
1 sugar shell
1 cream pitcher
1 sugar bowl
6 knives
6 forks
6 salad forks

B. Items which can be added for meal service and for use in special activities in food preparation

Linens
Silver
Serving dishes
Relish dishes
Jelly dishes
Large glass plates
Punch bowl and cups
Containers for centerpieces

IV. Equipment to be located in General Storage for the use of the entire class

A. Basic Equipment

Each item of equipment listed in Section I under part B should be a part of the basic equipment for use of the entire class if it is not included in each unit kitchen.

Large kettles (over 3 quarts)
1-2 colanders
Food mill (at least one)
Food chopper (at least one)
Standard mixer (at least one)
Large spoons
Wall can opener (number depending upon class size)
Coffee maker (at least one)
Tea kettle (if needed for heating water)
Paper towel dispenser
1-2 roasters (different sizes)
Shredder (at least one)
Cookie press (at least one)
Meat thermometer
1 or more candy thermometers
Butcher knife or chef's knife
Serrated knife (8" blade)
Large bowls (over 3 quarts)
Ladles
Wide mouth funnel
Food grinder (at least one)

B. Equipment which can be added to the general laboratory equipment

Carving set
Cake decorator
Pressure saucepan
Cheese cutter
Apple corer
Scales
Nut chopper
Quart measuring cup
Griddle
Waffle iron
Knife sharpener
Large coffee maker
Pie decorator
Grapefruit knives
Electric skillet
Deep fat fryer

The above equipment list is a suggested one and items of equipment from this list can be added if there is sufficient need for such equipment. Selection of equipment from this list will depend upon:

1. Suitability and efficiency of item in relation to use.

2. Cost of item in relation to use and need.

3. Opportunities for additional learning experiences in food preparation which item of equipment can provide. (For example, the electric skillet may be useful in teaching use and care of small appliances in food preparation.)

RESOURCE MATERIALS ON SPACE AND EQUIPMENT FOR HIGH SCHOOL HOME ECONOMICS DEPARTMENTS

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1. American Vocational Association. Developing Educational Specifications for Vocational and Practical Arts Facilities, AVA, 1010 Vermont Ave., N.W., Washington 5, D. C.

2. Educational Facilities Laboratories Publications, Educational Facilities Laboratories Inc., New York 22, New York.

3. U. S. Department of Health, Education and Welfare, Office of Education, U. S. Printing Office, Washington 25, D.C.

   Administrative Facilities in School Buildings
   The Secondary School Plant, An Approach for Planning Functional Facilities
   Designing Elementary Classrooms, Special Publication No. 1
   Functional Schools for Young Children
   Planning Schools for New Media

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1. Space and Equipment for Homemaking Programs. Misc. No. 9: Health, Education and Welfare, Washington 25, D.C.

2. A Guide for Planning Specialized Departments for High Schools in Iowa Bulletin No. 127-1. Iowa State College, Ames, Iowa.

3. Vossbrink, Meta. Equipping and Furnishing the Homemaking Department. East Lansing, Michigan: Michigan State University, College of Education, Department of Education. Professional Series Bulletin No.41, 1959.

4. Planning and Equipping the Homemaking Center. University of the State of New York. State Department of Education. Albany, New York, 1960.

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1. American Home Economics Association. Home Economics, New Direction Washington D.C., American Home Economics Association, 1959.

2. "Convertible Classroom" Forecast. October, 1959. pp 49-51.

3. Illinois Teacher of Home Economics. Vol. IV, No. 7 and Vol. V, No.5, University of Illinois, Department of Home Economics Education.

4. Dalrympla, Julia I. and Youmans, Rita L. "Space Utilization for Learning in Home Economics". Journal of Home Economics. Vol. 55, No. 2.

5. Pickett, Mary S. "Evaluating Storage and Counter Space", Journal of Home Economics. Vol. 52, No. 1, 1962.

6. Proceedings: Workshop in Space and Equipment for High School Home Economics. Madison, Wisconsin: University of Wisconsin, School of Home Economics. 1962.

7. Fleming, Mary "Unique Food Laboratory". Practical Home Economics, November, 1959.

8. "Trends in Industrial Arts and Home Economics". School Management, May, 1961.

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2. Small Homes Council-Building Research Council, University of Illinois.

   Household Storage Units
   Cabinet Space for Kitchen
   Kitchen Planning Standards

3. Ohio State University, Agricultural Extension Service. Columbus, Ohio.

   Plan Your Kitchen, Bulletin 279
   More Space in Your Kitchen
   Cupboard

4. Ohio Agricultural Experiment Station, Wooster, Ohio. Work Counter Surface Finishes.

5. U. S. Department of Agriculture, Beltsville Energy-Saving Kitchen. Leaflet No. 418. U.S. Government Printing Office, Superintendent of Documents, Washington 25, D.C.

6. "Planning the Kitchen and Workshop", Home and Garden Bulletin No. 12. U.S. Government Printing Office, Superintendent of Documents, Washington 25, D.C.

7. Institute of Agricultural Sciences. Planning your Workroom. State College of Washington, Pullman, Washington. Bulletin 320.

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1. Bursch, C.W. and Reid, T.R., High Schools Today and Tomorrow. Reinhold Publishing Corporation, 430 Park Ave., New York 22, New York.

2. Burton, W. H., Kimball, K.B., Wing, R.L., Education for Effective Thinking. New York: Appleton-Century-Croft, Inc. 1960.

CATALOGS FROM EQUIPMENT COMPANIES

1. Bavinco Manufacturing Company, Catalogs 59 and 60. Buffalo 11, New York.

2. Geneva Modern Kitchens. Geneva, Illinois.

   Geneva Home Arts Equipment
   Geneva Arts and Crafts Casework
   Geneva Food Laboratory Casework

3. Hamilton Manufacturing Company, "Self-contained Sewing Unit", Catalog AL476. Two Rivers, Wisconsin.

4. Kitchen Corporation, "Planning Guide for Teachers". Andrews, Indiana. Free is requested on school stationary.

5. Mutchler Brothers Company, "How to Improve Homemaking in Schools and Colleges", Napanee, Indiana.

6. Royal Equipment Company, Farnham Equipment and Supply, Greenville, Ohio.

7. St. Charles Manufacturing Company, St. Charles, Illinois.

8. Sheldon Equipment Company, Muskegon, Michigan.

9. Leonard Peterson & Company, Inc. 122-34 Fullerton Avenue, Chicago 14, Illinois.